

MOTOR AGE

LONG ISLAND'S GREATEST SPEED CARNIVAL VANDERBILT WHEATLEY MASSAPEQUA

NEW YORK, Sept. 28—Special telegram—Thirty in the Vanderbilt itself, nine in the Wheatley Hills and six in the Massapequa—forty-five in all—that in a nutshell tells of the magnitude of the great speed carnival on Long Island next Saturday, when the pick of the talent, both cars and drivers, will strive for the supremacy which a Vanderbilt win always gives, be it the big mug itself or one of its satellites.

With such a huge field, the largest in American motoring history, an exciting time is anticipated on Saturday, for put forty-five cars on a 12.64-mile circuit and have most of them running at once, there is bound to be plenty of ginger and fast time. The Vanderbilt cup cars go 278.08 miles or twenty-two laps; the Wheatley is at 189.60 miles, and the Massapequa 126.40 miles. As the starting is planned, the Elgin scheme will be adopted. The Vanderbilt candidates start at dawn and 1 hour later the Wheatley cars get the word; 30 minutes later the Massapequans are off and by this method the three races should all finish at about the same time.

The Vanderbilt this year is not a stock-car event as it was last season. It is a class C fixture, from which the weight restrictions have been removed and on which the piston displacement ranges from 301 to 600 inches. The Wheatley is a class B race for the 231-300 division, and the Massapequa is for the 161-230 class.

During the past week practice has been going on each morning. There have been only two accidents, but one of them resulted in an injury to George Robertson in the Benz. The fastest lap to date has been Burman's 10:15, which is a remark-

Entries

VANDERBILT

Benz	Heim
Benz	Hearne
Benz	Bruce-Brown
Aaco	Grant
Pope-Hartford	Fleming
Pope-Hartford	Dingley
National	Aitken
National	Livingstone
National	Distibrow
Lozier	Mulford
Simplex	Heardsley
Simplex	Mitchell
Marq.-Buick	L. Chevrolet
Marq.-Buick	Burman
Marq.-Buick	A. Chevrolet
Apperson	Hanshue
Marmon	Davison
Marmon	Harroun
Jackson	Schiele
Corbin	Matsen
Ampiea	Jones
Stoddard	De Hymel
Stoddard	Harding
Knox	Belcher
Mercedes	Wishard
Oldsmobile	Stillman
Oldsmobile	Nelson
Houpt	Limbberg
American	Wallace
Columbia	Stone

WHEATLEY HILLS

Marton	M. Basle
Marmon	Sherwood
Mercer	
Mercer	Mont Roberts
Correia	Maisonville
Corbin	Juhasz
S. P. O.	Pearce
Falcar	Gelnaw

MASSAPEQUA

Cole	Bill Endicott
Cole	H. Endicott
Lancia	Knipper
Abbott-Detroit	Lee Oldfield
Abbott-Detroit	Mort Roberts
Abbott-Detroit	Padula

CONDITIONS

Vanderbilt Cup, distance 278.08 miles; class C, open to cars from 301 to 600 cubic inches, no weight limitations.

Wheatley Hills, distance 189.6 miles; class B, open to cars of from 231 to 300 cubic inches.

Massapequa, distance 124.6 miles; class B, open to cars of from 161 to 230 inches.

Distance of lap, 12.64 miles.

ably fast pace. On Friday morning the press representatives were invited to be present to witness the first formal practice spins of the contesting cars. About a dozen were put through their paces. Dingley's Pope-Hartford made the circuit in 10:57.36, the fastest time of the morning. The Warner timing devices were installed Thursday night and the time made has some element of authenticity.

A damper was cast over the crowd by an accident by which it seemed likely that George Robertson, driver of Benz car No. 1 and his passenger, Stephen Reynolds of a New York daily newspaper, as well as the car, would be placed permanently out of commission. Robertson had consented to take the newspaper man around the course at speed. Approaching the Massapequa turn, when the course leaves the parkway and swings into the country road the Benz was traveling about 65 miles an hour. The turn is banked slightly, but Robertson steered too close to the top and as he realized the danger of going over with the momentum of the heavy car, he shut down and tried desperately to hold the car with the foot brake.

The car went over the edge just as Robertson yelled to Reynolds, "It's all off." Rolling over twice, the car righted itself, while Reynolds was thrown 30 feet through the air. Witnesses say that Robertson rolled over with the car, but such a thing seems hardly possible. Both men were taken back to the grandstand and recovered consciousness in a few minutes, when the driver was removed to the Nassau county hospital. He was sorely bruised and cut about the face and his right side was jarred and it was feared that he might develop internal injuries. The latest reports from



the hospital, however, indicate that his strong constitution and powerful, muscular frame have been able to protect him from vital injury and he promises to be on hand to watch the race. Reynolds was only severely shaken and jarred. The car looked to be a wreck, but close examination showed that a few hours' work would put it back in racing condition.

That day Burman in a Marquette-Buick turned the course in 10:52:20. Other speedy trials were those of Jack Fleming, Pope-Hartford, 11:00; Matson, Corbin, 11:20, on his first trial at the course; Mitchell, Simplex, 11:08; Dingley, Pope-Hartford, 11:14; Hearne, Benz, 15:05; Grant, Aleo, 11:14. In practice Saturday Burman in a Marquette-Buick turned the course in 10:15, the fastest practice to date and 18 seconds faster than the best time made in preliminary work last year. His rate of speed was just short of 74 miles per hour.

The Lancia entry for the Massapequa was wrecked Monday morning on the Westbury turn by collision with Burman's Marquette-Buick. The accident was not accountable to Burman. The Lancia was wrecked and may not be able to start. Knipper and his mechanic were not seriously hurt, but neither is likely to take part in the contest. Burman's car was uninjured save for the loss of a hub-cap.

The practice today was moderately fast work. There was nothing sensational about the time made, except that Fleming in the Pope went around the course in 11:20 again. Other trials were as follows: Livingston, National, 10:31; Bur-

man, Marquette-Buick, 11:13; Hearne, Benz, 11:14; Wishard, Mercedes, 11:21; Scheifler, Jackson, 12:03; A. Chevrolet, Marquette, 11:10; Harroun, Marmon, 13:15; Stone, Columbia, 11:07; Stillman, Oldsmobile, 11:56; Matson, Corbin, 17:11.

The Amplex met with a mishap that may prevent the competition of the car. While going at a lively clip on the back stretch, the driver sought to avoid a motor cycle just at the close of practice and was obliged to make such a sudden turn that he dropped a torsion tube, which resulted in some damage to the car. A hurry order had been sent to the factory for repair parts and the announcement has been made that a determined effort will be made to have the car on the starting line. The official weighing-in will be completed Thursday night, after which the drawing of the race numbers will be held.

Grant had the narrowest escape from injury Saturday and only his characteristic coolness kept him from upsetting. Grant was tooling his Aleo along a level straight stretch of parkway at a speed estimated to be 80 miles an hour when both the right tires unshipped at precisely the same instant. With death staring him in the face Grant kept his head and although the big car ricochetted down the road like the wriggling of a gigantic serpent the nervy driver managed to hold it fairly steady until the shutting off of the power and applied brakes combined to bring the car to a standstill. Grant's remarkable coolness cropped out a second later. The instant the car stopped Grant jumped from the seat and regarded the bare rims where



the tires should have been with an expression indicative of intense amazement.

It is doubtful if an American speed carnival ever attracted a greater lot of crack drivers than this one has. A roll call shows most of the prominent cup winners of the past two seasons. Harry Grant in the Aleo is the only Vanderbilt winner in. Robertson was to have driven, but his fall in practice injured him so that today it was announced that his place would be taken by Franz Heim, who, while a stranger in this country, has quite a reputation abroad. He comes from Germany.

From Grant down the list bristles with stars—Ralph Mulford in a Lozier, winner of the Elgin National; Al Livingstone, National, winner of the Illinois cup; E. A. Hearne, Benz, winner of the Fox River;

FIGURING VANDERBILT PACE

M.P.H.	Lap time
45.	16:50%
46.	16:28%
47.	16:07%
48.	15:47%
49.	15:27%
50.	15:09%
51.	14:52
52.	14:34%
53.	14:19%
54.	14:01%
55.	13:46%
56.	13:32%
57.	13:18%
58.	13:03%
59.	12:50%
60.	12:38
61.	12:25%
62.	12:13%

SPECIFICATIONS OF CARS IN LONG ISLAND MOTOR PARKWAY ROAD RACES SATURDAY

Car	Driver	Motor				Wheels		Cooling		Magneto	Gearset			Drive	Wheel-base		
		Price	Bore	Stroke	No. of cyl.	Front Wheels	Rear Wheels	Radiator	Pump		Clutch	Speeds	Location				
VANDERBILT CUP																	
Benz	F. Heim	\$6,250	5	6	4	35	x5	34	x4	T.	Cent.	Bosch	Cone	4	Amid	Shaft	123
Benz	Hearne	6,250	5	6	4	35	x5	34	x4	T.	Cent.	Bosch	Cone	4	Amid	Shaft	123
Benz	Bruce-Brown	6,250	5	6	4	35	x5	34	x4	T.	Cent.	Bosch	Cone	4	Amid	Shaft	123
Alco	Grant	6,000	4 $\frac{3}{4}$	5 $\frac{1}{2}$	6	36	x4	35	x4 $\frac{1}{4}$	H.	Cent.	Bosch	M. D.	4	Amid	Chain	126
Pope-Hartford	Fleming	3,000	4 $\frac{3}{4}$	5 $\frac{1}{2}$	4	35	x5	35	x5	T.	Cent.	Bosch	Cone	4	Amid	Shaft	124
Pope-Hartford	Dingley	3,000	4 $\frac{3}{4}$	5 $\frac{1}{2}$	4	35	x5	35	x5	T.	Cent.	Bosch	Cone	4	Amid	Shaft	124
National	Aitken	2,500	5	5 $\frac{1}{2}$	4	34	x4 $\frac{1}{2}$	34	x4 $\frac{1}{2}$	T.	Cent.	Bosch	Cone	3	Amid	Shaft	124
National	Livingstone	2,500	5	5 $\frac{1}{2}$	4	34	x4 $\frac{1}{2}$	34	x4 $\frac{1}{2}$	T.	Cent.	Bosch	Cone	3	Amid	Shaft	124
National	Disbrow	2,500	5	5 $\frac{1}{2}$	4	34	x4 $\frac{1}{2}$	34	x4 $\frac{1}{2}$	T.	Cent.	Bosch	Cone	3	Amid	Shaft	124
Lozler	Mulford	4,600	5 $\frac{3}{4}$	6	4	36	x4	36	x5	H.	Cent.	Bosch	M. D.	4	Amid	Shaft	124
Simplex	Beardsley	4,500	5 $\frac{3}{4}$	5 $\frac{3}{4}$	4	36	x4	36	x5	H.	Cent.	Bosch	M. D.	4	Amid	Chain	124
Simplex	Mitchell	4,500	5 $\frac{3}{4}$	5 $\frac{3}{4}$	4	36	x4	36	x5	H.	Cent.	Bosch	M. D.	4	Amid	Chain	124
Marquette-Buick	L. Chevrolet	3,950	6	5 $\frac{1}{4}$	4	34	x4 $\frac{1}{2}$	34	x4 $\frac{1}{2}$	Tor. C.	Gear	Remy	M. D.	4	Amid	Shaft	110
Marquette-Buick	Burman	3,950	6	5 $\frac{1}{4}$	4	34	x4 $\frac{1}{2}$	34	x4 $\frac{1}{2}$	Tor. C.	Gear	Remy	M. D.	4	Amid	Shaft	110
Apperson	Hanshue	4,250	5 $\frac{3}{4}$	5 $\frac{3}{4}$	4	34	x4	35	x4 $\frac{1}{2}$	T.	Cent.	Bosch	Con. bd.	4	Amid	Chain	105
Marmon	Dawson	2,750	4 $\frac{1}{2}$	5	4	34	x4	34	x4	Cel.	Cent.	Bosch	Cone	3	Axle	Shaft	120
Marmon	Harroun	2,750	4 $\frac{1}{2}$	6 $\frac{1}{2}$	4	34	x4	34	x4	Cel.	Cent.	Bosch	Cone	3	Axle	Shaft	120
Jackson	Schieffler	2,000	4 $\frac{7}{8}$	4 $\frac{3}{4}$	4	34	x4	34	x4	Cel.	Syphon	Splitdorf	M. D.	3	Motor	Shaft	105
Corbin	Matson	4,000	4 $\frac{1}{2}$	4 $\frac{1}{4}$	6	34	x4	34	x4	H.	Cent.	Bosch	Cone	3	Amid	Shaft	109
Amplex	Jones	2,500	5	5 $\frac{1}{2}$	4	36	x4	36	x4	Cel.	Cent.	Bosch	M. D.	3	Axle	Shaft	128
Stoddard-Dayton	De Hymel	3,000	5 $\frac{1}{2}$	4	36	x4	36	x4	T.	Cent.	Bosch	Cone	3	Amid	Shaft	106	
Stoddard-Dayton	Harding	3,000	5 $\frac{1}{2}$	4	36	x4	36	x4	T.	Cent.	Bosch	Cone	3	Amid	Shaft	106	
Knox	Belcher	4,700	5 $\frac{3}{4}$	4	36	x5	36	x5	Cel.	Cent.	Bosch	M. D.	3	Amid	Shaft	106	
Mercedes	Wishard	5 $\frac{1}{2}$	6	4	36 $\frac{1}{2}$	x3 $\frac{3}{4}$	36 $\frac{3}{4}$	x5	H.	Cent.	Bosch	Coll	4	Axle	Chain	108



Louis Chevrolet, Marquette Buick, winner of the Cabe; Joe Matson, Corbin, winner of the Indiana and Massapequa; Harroun, Marmon, winner of the Wheatley; Fleming, Pope-Hartford and Dingley, Pope-Hartford, winners of the Portola and Wemme trophies out west; Hanshue, Apperson, winner of the Santa Monica; Burman, Marquette-Buick, winner of the Vespers and Knipper, Lancia, winner of the Merrimack.

Of the lot there are several who are in the Vanderbilt for the first time—Mulford, Fleming, Livingstone, Disbrow, Beardsley, Arthur Chevrolet, Hanshue, Dawson, Schuffer, de Hymel, Belcher, Stillman, Nelson, Lunberg, Wallace and Stone, not to mention those in the two smaller races.

In the opinion of Joe Matson, who will drive the six-cylinder Corbin car in the

Vanderbilt cup race, this year will see a new record made in the classic contest and not only will the record be broken, but battered badly. "I think the winner of this year's race will have to average better than 70 miles an hour," said Matson. "The rain has improved the course and it doubtless will be perfect on the day of the race. The elimination of the banked corners and widening them has made the course several miles an hour faster. In the race of 1906 Robertson averaged 64.4 miles an hour with a special racer, and in last year's race Grant covered the distance at an average speed of 62.8 miles an hour, and with a stock car. At times he made over 70 miles an hour. There is no doubt that all the cars are faster this year, and with so many in the race and a faster course I am positive the winner will have to equal 70 miles an hour in order to win, and—I hope I'll be the winner. I mean to go right out from the start."

Walter Jones, who is to drive the Amplex car, is but 20 years of age and probably will be the youngest driver to start in the contest on the morning of October 1. Probably the most picturesque driver who will participate in the race is Tobin de Hymel, whose real name is Whistling Wind. De Hymel is an Astec Indian, only 19 years of age, but those who have seen him drive in track and road events in the south and southwest state without hesitation he is the most spectacular race driver in America. His latest victory with a Stoddard-Dayton was the 200-miles event at Galveston. In that race he drove a

Stoddard-Dayton car owned by G. A. C. Half, of San Antonio, which same car he will drive in Saturday's race.

Spencer E. Wishard will drive his 60 horse-power Mercedes car in the Vanderbilt cup race. Wishard drove in the Vanderbilt last year and was making a creditable showing for honors, when the race was called off. Wishard is an amateur driver and pilots cars solely for the exhilarating sport. He announces that if he wins any of the cash prizes offered in the race he will donate the money to some worthy charity.

The officials of the race are as follows: Referee, William K. Vanderbilt, Jr.; judges, Henry Sanderson, Colgate Hoyt, Dave Hennen Morris and R. L. Morrell and Samuel M. Butler; technical committee, A. L. McMurtry, Henry Souther and Alexander Churchward; A. A. A. representative, Frank G. Webb; assistant to the president, A. R. Pardington. The weighing-in process this year is being conducted at Mineola under the supervision of A. L. McMurtry. The Vanderbilt cars have to be passed upon only with regard to piston displacement and brakes, but the contestants in the sweepstakes under class B are obliged to undergo a rigid examination.

It is announced that the Bosch Magneto Co., of New York, through Harlow Hyde, has offered the following cash prizes to drivers in the Vanderbilt: To the winner, \$500; second placed car, \$250; third placed car, \$150. The decision of the official referee in each of these races will govern the award of the prizes.



FIGURING VANDERBILT PACE

M.P.H.	Lap time
63.	12:03
64.	11:50 $\frac{1}{5}$
65.	11:40 $\frac{1}{5}$
66.	11:30 $\frac{1}{5}$
67.	11:20
68.	11:10
69.	10:59 $\frac{4}{5}$
70.	10:49 $\frac{4}{5}$
71.	10:40 $\frac{4}{5}$
72.	10:32
73.	10:24 $\frac{2}{5}$
74.	10:14
75.	10:06 $\frac{4}{5}$
76.	9:59
77.	9:51 $\frac{1}{2}$
78.	9:44
79.	9:36 $\frac{2}{5}$
80.	9:28 $\frac{4}{5}$

SPECIFICATIONS OF CARS IN LONG ISLAND MOTOR PARKWAY ROAD RACES SATURDAY

Car	Driver	Motor			Wheels		Cooling		Magneto	Clutch	Gearset		Drive	Wheel-base	
		Price	Stroke	Bore	No. of cyl.	Front Wheels	Rear Wheels	Radiator			Speeds	Location			
Oldsmobile	Stillman	3,500	5	6	4	36 x 4 $\frac{1}{2}$	36 x 4 $\frac{1}{2}$	H.	Cent.	Bosch	Cone	4	Motor	Shaft	124
Oldsmobile	Nelson	3,500	5	6	4	36 x 4 $\frac{1}{2}$	36 x 4 $\frac{1}{2}$	H.	Cent.	Bosch	Cone	4	Motor	Shaft	124
Houpt-Rockwell	Limberg	5,000	5 $\frac{1}{2}$	6	4	36 x 4	36 x 5	H.	Cent.	Bosch	M. D.	4	Motor	Shaft	127
American	Wallace	5,000	5 $\frac{1}{2}$	5 $\frac{1}{2}$	4	36 x 4 $\frac{1}{2}$	36 x 4 $\frac{1}{2}$	T.	Cent.	Bosch	Cone	4	Amid	Shaft	112
Columbia	Stone	3,300	4 $\frac{1}{2}$	5 $\frac{1}{2}$	4	36 x 4	36 x 4	T.	Cent.	Bosch	Cone	3	Amid	Shaft	120

WHEATLEY HILL SWEEPSTAKES

Marion	M. Basie	1,600	4 $\frac{1}{4}$	4 $\frac{1}{2}$	4	32 x 4	32 x 4	T.	Cent.	Bosch	M. D.	3	Axle	Shaft	102
Marmon		2,750	4 $\frac{1}{2}$	5	4	34 x 4	34 x 4	T.	Cent.	Bosch	Cone	3	Axle	Shaft	120
Mercer	Sherwood	2,250	4 $\frac{3}{4}$	5	4	32 x 3 $\frac{1}{2}$	32 x 4	H.	Cent.	Bosch	M. D.	3	Frame	Shaft	108
Correja	Mont Roberts	2,250	4 $\frac{3}{4}$	5	4	32 x 3 $\frac{1}{2}$	32 x 4	H.	Cent.	Bosch	M. D.	3	Axle	Shaft	105
Corbin	Malsonville	1,450	4 $\frac{1}{4}$	5	4	34 x 3 $\frac{1}{2}$	34 x 3 $\frac{1}{2}$	Cel.	Cent.	U. & H.	M. D.	3	Axle	Shaft	108
S. P. O.	Juhasz	2,750	4 $\frac{1}{2}$	4 $\frac{1}{4}$	4	34 x 4	34 x 4	H.	Gear	Bosch	Cone	3	Amid	Shaft	108
Falcar	Pearce	3,250	3 $\frac{1}{2}$	5 $\frac{1}{2}$	4	32 x 4	32 x 4	H.	Cent.	Bosch	Cone	3	Amid	Shaft	103
Falcar	Gelnaw	1,750	4 $\frac{1}{8}$	5 $\frac{1}{4}$	4	34 x 4	34 x 4	T.	Cent.	Bosch	Cone	3	Amid	Shaft	116 $\frac{1}{2}$

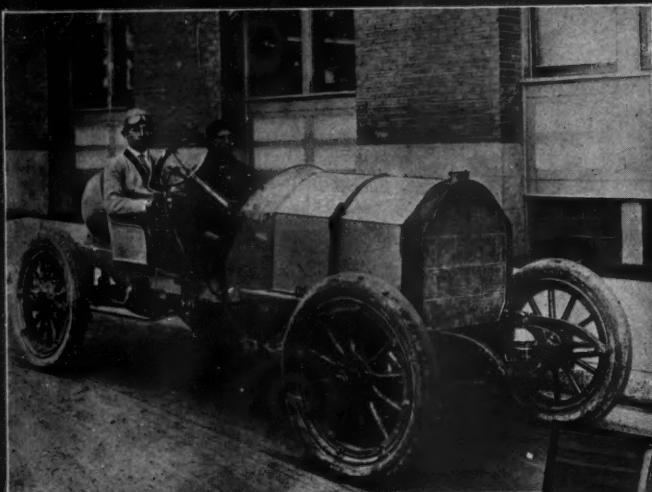
MASSAPEQUA CUP

Cole	W. Endicott	1,500	4	4	34 x 3 $\frac{1}{2}$	34 x 3 $\frac{1}{2}$	T.	Syphon	Splitdorf	Cone	3	Motor	Shaft	108	
Cole	H. Endicott	1,500	4	4	34 x 3 $\frac{1}{2}$	34 x 3 $\frac{1}{2}$	T.	Syphon	Splitdorf	Cone	3	Motor	Shaft	108	
Lancia	Knipper	3,500	4	4 $\frac{1}{2}$	4	32 x 4	32 x 4	H.	Cent.	Bosch	M. D.	4	Motor	Shaft	105
Abbott-Detroit	L. Oldfield	1,500	4	4 $\frac{1}{2}$	4	34 x 3 $\frac{1}{2}$	34 x 3 $\frac{1}{2}$	H.	Cent.	Bosch	M. D.	3	Amid	Shaft	110
Abbott-Detroit	Mort Roberts	1,500	4	4 $\frac{1}{2}$	4	34 x 3 $\frac{1}{2}$	34 x 3 $\frac{1}{2}$	H.	Cent.	Bosch	M. D.	3	Amid	Shaft	110
Abbott-Detroit	Padula	1,500	4	4 $\frac{1}{2}$	4	34 x 3 $\frac{1}{2}$	34 x 3 $\frac{1}{2}$	H.	Cent.	Bosch	M. D.	3	Amid	Shaft	110

P means cast in pairs; T, tubular; H, honeycomb; Cent., centrifugal. All cylinders are cast in pairs except Apperson, which is cast single, and Lancia, en bloc. All have selective type of gearset.



2



1



3

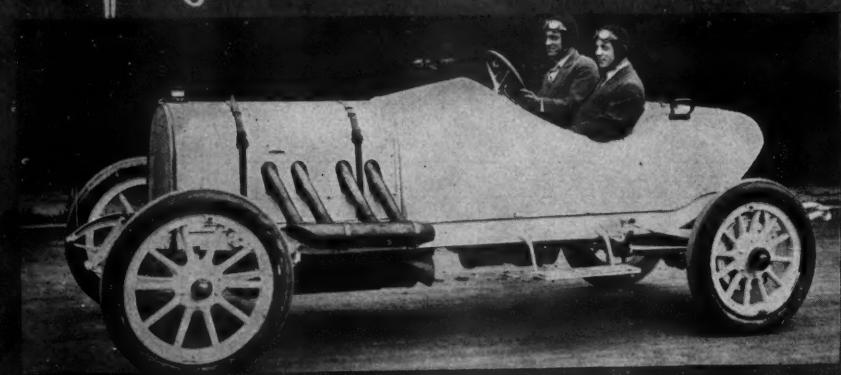
VANDERBILT DRIVERS

- | | |
|---------------------|-----------------|
| 1—Fred Belcher..... | Knox |
| 2—H. Hanshue..... | Apperson |
| 3—Joe Matson..... | Corbin |
| 4—T. de Hymel..... | Stoddard-Dayton |
| 5—L. Mitchell..... | Simplex |
| 6—Bert Dingley..... | Pope-Hartford |

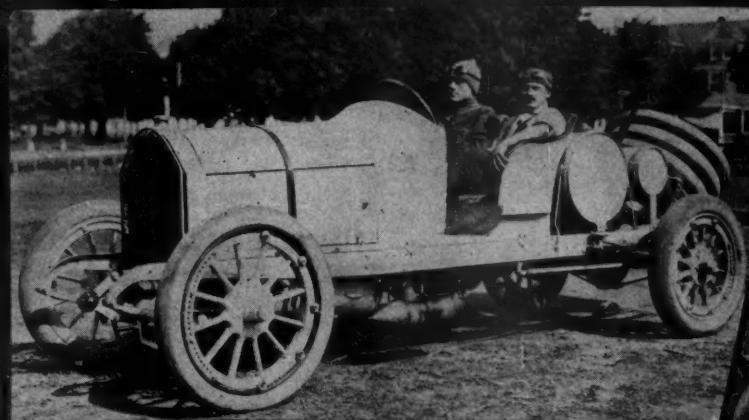
4



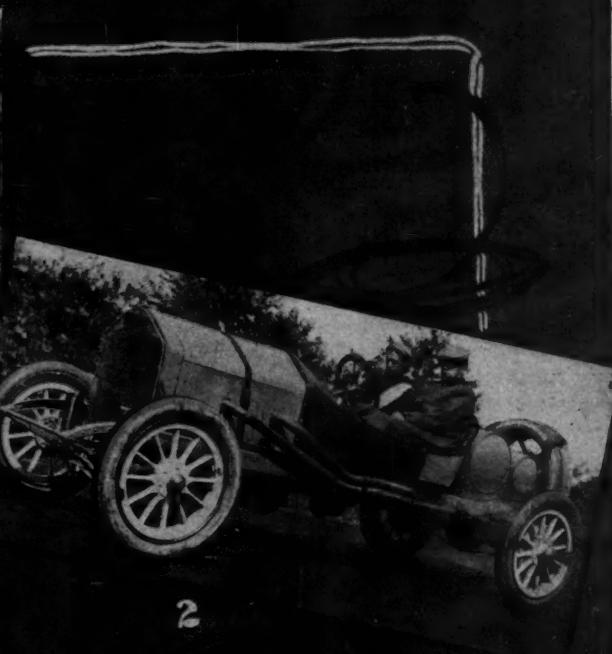
6



5



1



2



3



4



5



6

VANDERBILT DRIVERS

- | | |
|--------------------------|------------|
| 1—David Bruce-Brown..... | Benz |
| 2—L. A. Disbrow..... | National |
| 3—Walter Jones..... | Amplex |
| 4—Ralph Mulford..... | Lozier |
| 5—Ray Harroun..... | Marmon |
| 6—H. M. Stillman..... | Oldsmobile |

Norristown Club Meet at Narbeth

PHILADELPHIA, PA., Sept. 24—Notwithstanding the fact that what was billed as the stellar attraction of the day, the \$2,000 match race between George Robertson and Ralph de Palma, had to be called off at the last minute owing to the former's serious accident yesterday while speeding over the Vanderbilt cup course, the initial race meet of the Norristown Automobile Club, held on the track of the Belmont Driving Club at Narbeth today, was very successful, and fully 5,000 persons filled the grandstand and spread themselves over the grounds. In lieu of the match race, de Palma, driving his 90-horsepower Fiat Cyclone, went after the 1 and 10-mile records for a circular track, and, in the enforced absence of Robertson, his efforts in this direction were naturally the center of attraction. Right royally did he acquit himself. In the 1-mile time trial he negotiated the distance in :49½, which is the best time ever seen in Philadelphia, and set a new record for that distance in Pennsylvania. His time for the first ½ was :22¾. But de Palma's greatest achievement was yet to come in the 10-mile trial. Off to a good start, the Italian reeled off mile after mile with undiminished speed and covered the distance in 8:31½, creating a new 10-mile American track record. Considerable speculation has been aroused, however, as to whether these records will be recognized officially by the contest board of the A. A. A., as the electrical timing apparatus went wrong and it was impossible to time the record in its entirety. Such an apparatus, in conformity to the A. A. A. ruling, had been installed for this meet, but from the start the timers had difficulty in working it and it is extremely doubtful if the new figures will stand.

In addition to the performances against time, de Palma drove in the 5-mile free-for-all handicap and easily distanced all competitors, winning in 4:57¾. Although he allowed the other contestants 20 seconds' start, he overhauled them all before the end of the second mile.

Event No. 6, a 5-mile race between a Warren-Detroit, Tom Berger at the wheel, and an Otto car, George H. Jones driving, was won handily by the former. The next event, also for 5 miles, was monopolized by the Klinekar, there being three of this make entered, driven by C. C. Fairman, W. D. Morton and James D. Kerr. Fairman flashed across the line ½ second in front of Morton. It is a curious coincidence that in the 10-mile race between three Klinekars, same drivers, the cars finished in exactly the same order as the preceding race of 5 miles, and Fairman again raced across the finish line ½ second in the lead, thereby winning two events by the smallest possible margin. To carry out this oddity still further, Fairman won the 10-mile free-for-all by the same slim

leeway, with the Otto car a good third. The meet was brought to a conclusion with a legal speed limit contest, the winner to be the driver who negotiated 2 miles in the time nearest to the time secretly agreed upon, which was 6 minutes 30 seconds. The Otto, William Kruse driver, won. Time, 6:08. Summaries:

One-mile time trial, Ralph de Palma driving 90-horsepower Fiat Cyclone. Time, :49½.

Five miles, class C, division 3, 231 to 300 cubic inches—T. Berger, Warren-Detroit, won; time, 5:23¾. G. H. Jones, Otto, second; time, 5:39¾.

Five miles, class B, division 4, 301 to 450 cubic inches—C. C. Fairman, Klinekar, won; time, 5:28. W. D. Morton, Klinekar, second; time, 5:28½. James D. Kerr, Klinekar, third; time, 5:34¾.

Ten-mile time trial by Ralph de Palma, driving Fiat. Time, 8:31½.

Ten miles, class B, division 4, 301 to 450 cubic inches—C. C. Fairman, Klinekar, won; time, 10:44¾. W. D. Morton, Klinekar, second; time, 10:44¾. J. D. Kerr, Klinekar, third; time, 10:45¾.

Five-mile free-for-all handicap—Ralph de Palma, Fiat, won; time, 4:57¾. T. Berger, Warren-Detroit, second; time, 5:03¾. W. J. McFarlane, Otto, third; time, 5:06¾.

Ten-mile free-for-all handicap—C. C. Fairman, Klinekar, won; time, 10:32½. J. D. Kerr, Klinekar, second; time, 10:32¾. W. J. McFarlane, Otto, third; time, 10:33.

Two miles, legal speed limit, nearest secret time of 6 minutes 30 seconds—W. Kruse, Otto, won; time, 6:08; W. J. McFarlane, Otto, second; time, 6:06¾; C. C. Fairman, Klinekar, third; time, 5:57¾.

SPORT DULL ON COAST

San Francisco, Cal., Sept. 23—The outlook for motoring contests in California during the next few months is not overbright. The two events that were really worth while have been postponed, and there appears to be some doubt as to whether they will finally be pulled off. The Portola road race, which was to have been held on September 10 in Golden Gate park, in this city, has been indefinitely postponed, although there is a strong movement to have it put on about Christmas time, and it is also possible that it may be taken up again this year by the business men of Oakland, who successfully financed it last year as the Portola events. The Alameda county course, which would again be used in this case, is believed by some of the local racing men to be a faster one than that afforded by the Golden Gate park. The Dealers' Association of Oakland is now considering the feasibility of undertaking the race.

The Santa Monica road race, the second blue ribbon event of the coast, which was won last year by Harris Hanshue in an Apperson, has also been postponed, after much discussion of the fireworks variety among the fraternity of Los Angeles. This race also may be held at a later date, but several objections will have to be smoothed over before this will be possible.

The motorists of San Francisco are entirely out of the running, so far as contests are concerned. Few of the dealers take any interest in them, and those that do lack a head to push through the necessary work. This has been the situation for a year or so past, and the agents are

becoming more confirmed in their attitude every day. The numerous endurance tests and hill-climbs, with their consequent publicity, which prove so attractive to the eastern dealers, have no charm for the local representatives, and there is not an event on the motor calendar. In fact, so far as northern California is concerned, there is no motor calendar.

RACING AT MILWAUKEE

Milwaukee, Wis., Sept. 27—Barney Oldfield broke three track records at the state fair park circular mile dirt track this afternoon before 7,500 people. Oldfield went 25 miles in the Darracq. He went the first 10 miles in 9:10; the 20 miles in 18:15¾, and the 25 miles in 23:47. De Palma's time, made at Grand Rapids, Mich., last year, was 18:30 for 20 miles and 23:59 for 25 miles. Oldfield went the mile in :51. He went 60.5 miles in the hour in a Knox.

The track was in splendid condition, its coat of oil preventing any damage by an almost continuous rain for 3 days previously. The only tire trouble occurred in the 1-hour race, when Hughes' Falcar and Kent's Buick were delayed. Summaries:

Ten miles, stripped chassis up to 230 cubic inches—W. H. Fahr, Buick, won; Harry Borsch, Warren-Detroit, second. Time, 10:31¾.

Ten miles, stripped chassis, 231-450 cubic inches—W. H. Fahr, Marquette-Buick, won; C. B. Kent, Buick, second; Harry Nelson, Pope-Hartford, third; Hugh Hughes, Falcar, fourth. Time, 9:52¾.

Special match, 5 miles—Barney Oldfield, Knox, won; John Heber, Marion, second. Time, 5:32¾.

Twenty-five miles for record—Barney Oldfield in 100-horsepower Darracq; Time, 23:47. Recognized 25-mile circular dirt track record, 23:50, made by Ralph de Palma in Fiat at Grand Rapids, Mich., 1909. Intermediate time, 10 miles, 9:10; 20 miles, 18:15¾.

Ten-mile handicap, stripped chassis up to 600 cubic inches—Harry Nelson, Pope-Hartford, :30 handicap, won; time, 10:25; Hughes, Falcar, second; Kent, Buick, third; Borsch, Warren-Detroit, fourth; Heber, Marion, fifth.

One mile for record—Barney Oldfield, 200-horsepower Benz, failed. Time, :51. Breaks state fair park track record of :54 established by Oldfield in Peerless Green Dragon, 1904.

One-hour race, free-for-all, stripped stock chassis, for president's cup, donated by Clarke S. Drake, president Milwaukee Automobile Club—Barney Oldfield, Knox, won, distance, 60.5 miles; Nelson, Pope-Hartford, second, 57.75 miles; Fahr, Buick model 10, third, 57.2 miles; Borsch, Warren-Detroit, fourth, 57 miles; Fisher, Buick model 19, fifth, 55.2 miles; Hughes, Falcar, sixth, 51 miles; Kent, Buick model 17, seventh, 44 miles.

FRISCO SHOW PROSPECTS

San Francisco, Cal., Sept. 23—Plans are now being laid for a show to be held in this city during December or January. Behind the movement is the San Francisco Motor Club, and to President Henry M. Owens, of the latter organization, applications for space should be made. There is considerable opposition among many of the older and well established firms to the holding of a show, many of them declaring that exhibitions of this kind have a tendency to disturb the regular flow of trade and are disadvantageous otherwise. On the other hand, there are among the dealers many who are strongly of the opinion that a show stirs up a great deal of interest among prospective buyers and brings them right down to the buying

stage. The entire matter will be canvassed among the motorists during the next few weeks, but there probably are enough of those who demand a show to make it an assured fact that one will be held, whether all the local firms are represented or not. The Coliseum, in which two of the previous shows were held, has been rebuilt, and it is probable that the exhibition will be held in this spacious structure. The dealers of Oakland, across the bay from San Francisco, also are getting ready for a show. Their exhibition will be held in November, according to the present plans. Most of the cars represented in San Francisco also have their agents or sub-agents in Oakland, and after one preliminary scrap, it is understood that harmony now reigns and that there will be a complete representation in the show. The management of the show is in the hands of George F. Detrick, who pulled off a successful show in Oakland a year ago.

MOTOR CAR VS. HORSE

New York, Sept. 26—A public demonstration of the comparative economy of the motor car and the horse now is being made in and around this city by the Maxwell-Briseoe Motor Co., which is conducting the affair under the supervision of observers appointed by the A. A. A. contest board. The Maxwell company this morning started out simultaneously a model Q 11 four-cylinder 22-horsepower runabout and a horse and buggy. Accurate tab is being kept of the mileage and cost of operation, it being the Maxwell contention that the runabout is a utility car that can be operated at less than 2 cents per passenger mile and that it is more economical than a horse and buggy.

At the end of today's test the observers reported that the Maxwell had covered 67.4 miles in 5 hours, using 5 gallons of gasoline costing 85 cents and 1 pint of oil costing 15 cents; total cost, \$1; comparative cost per mile, .014 cent; cost per passenger mile, .007 cent. The horse and buggy did 28.8 miles in the 5 hours. The horse consumed 12 quarts of oats and 20 pounds of hay, which cost 95 cents, making the comparative cost per mile .032, and the cost per passenger mile of .016 cent. There will be five more of these tests.

CHICAGO'S SIGNBOARD WORK

Chicago, Sept. 27—The signboard committee of the Chicago Motor Club has added finishing touches to its routes. It has marked the Chicago-Milwaukee routes and the Chicago-Lake Geneva routes inside the city, and has secured permission from the west park commissioners to post signs on the boulevards in that section. When the south park commissioners surrender this work inside the city limits can be completed. Hitherto the permission of the park boards to post the signs has been denied.

Wonderful Pace of the Little Cars

BOULONCE-SUR-MER, Sept. 17—An average speed of 55.7 miles an hour for a distance of 282.4 miles of hilly, winding road; one round of 23½ miles officially covered at the rate of 58.7 miles an hour; an unofficial record of 66.4 miles an hour for another round; a speed of not less than 84 miles an hour on the straightaway—all this sounds like going some. And it is not a revival of the grand prix race with 160 horsepower monsters that is under discussion, but merely the officially controlled speeds of the fastest cars in the Voiturette cup race, where the bore of the little four-cylinder cars was not allowed to exceed 2½ inches, or if you like to have it in accurate decimals, 2.559 inches.

If these little cars had been possible 6 years ago, George Heath certainly would not have won the race for the Vanderbilt cup. It is doubtful even if Louis Wagner would have held the trophy for the Darracq company, for 55.7 miles at hilly Boulogne is equal to more than 61.43 miles on level Long Island; it is equally doubtful if Sisz could have held his own on the straightaway Sarthe course against these terrible pygmies. Now that we have seen what they can do, there is a proposal that these little racers should be shipped across the Atlantic to take part in the Vanderbilt cup race. If this is followed out it can be taken for granted that Zuccarelli, Boillot, and Goux with their nominal 8-horsepower cars, light on tires, smart in getting away, and terribly fast when going, will set a hard task to the 200-horsepower racers. This race has been a crowning acknowledgment of the long-stroke motors, all of which were specially made for the race.

The race for the sixth annual Voiturette cup was one of the finest exhibitions of speed we have seen in France, and was particularly welcome after a monotonous series of aviation meetings. The seventeen entrants were reduced to fourteen almost at the last moment, the most serious loss being that of Giuppone, killed while practicing in a Lion-Peugeot only 2 days before the race; a Tribet smashed its clutch coming to the starting line, and a Saint-Lanne-Martin, with a de Dion motor, quietly disappeared.

A morning fog rolled in from the sea held the start back from 7 to 8 o'clock. Then the cars were sent away at intervals of 1 minute, the course to be covered being one of 23½ miles, comprising several 10 per cent grades and numerous sharp turns, three of them being hairpins. Starting second, Zuccarelli finished first on the initial round in 25 minutes 35 seconds, easily beating last year's record of 29:28 over the same course. There was a surprise when the next car to roar by was Boillot's four-cylinder Lion-Peugeot which had started twelfth and passed the Hispano-Suiza, a Calthorpe, a D. S. P. L.,

a Corre La Licorne, and a De Bazelaire. With a standing start Boillot had averaged 57 miles an hour. But there was still faster work, Goux coming round the course on his two-cylinder Lion-Peugeot in 24 minutes 33 seconds, or 17 seconds faster than his team mate.

All interest was not centered on the Lion-Peugeot and the Hispano-Suiza cars. Boillot led at the end of the second round, time 49 minutes 26 seconds, compared with 58.38, last year's record. At the end of the third round Goux was ahead, with Boillot 15 seconds behind him, and the whole Spanish team clinging on with grim determination. Goux made a desperate effort to shake the foreigners off, accomplishing his third round in 24 minutes 2¾ seconds, or an average of 58.7 miles an hour, this remaining the official record for the day.

From the third round onwards the real struggle lay between Goux's two-cylinder Lion Peugeot and Zuccarelli's four-cylinder Hispano-Suiza, with Chassaigne as a dangerous runner-up, and Boillot a violent sprinter unable to make up the time lost through his frequent but brief stops. At the end of six rounds, half distance, Goux had a lead of nearly 2 minutes on the Spaniard Zuccarelli, but it was not sufficient to assure him the victory, for on the next round he punctured twice, had to change with fixed rims and allowed Zuccarelli to get a lead of 6 minutes. On the eighth round the lead was pulled down to 5 minutes; on the ninth round it had been dropped to 4 minutes; on the tenth round it was still 4 minutes, and there remained two rounds to be covered on each of which the Frenchman must gain 2 minutes in order to beat the Spaniard. Goux might have done it had he had ordinary luck with his tires, but on the eleventh round he punctured three times and occupied 38 minutes 5 seconds on the course which he had previously been covering in an average of 24½ minutes. This lost him the race, for although Zuccarelli, who never once punctured, was held up by reason of a leak in his gasoline tank, he got round the course in 29 minutes 3 seconds. Goux went for all he was worth on the last lap, but another puncture, the breakage of a shock absorber and the jumping of one of his driving chains from its sprocket, held him down to 29 minutes 8 seconds for the round. Zuccarelli had won the race with a margin of exactly 17 minutes, had beaten last year's record established by Giuppone on a single cylinder Lion-Peugeot by almost an hour, and had shown an average speed of 55.7 miles an hour. Summary:

1—Zuccarelli, Hispano-Suiza, average 55.7 miles an hour.....	5:04:50
2—Goux, Lion-Peugeot	5:21:50
3—Chassaigne, Hispano-Suiza	5:30:45
4—Boillot, Lion-Peugeot	5:37:36
5—Collomb, Corre La Licorne	6:28:16
6—Pilliverde, Hispano-Suiza	6:37:51
7—Levy, Corre La Licorne	Not timed
Fastest round, Goux, Lion-Peugeot, average 55.7 miles.....	

MOTOR AGE
Published Weekly by
THE CLASS JOURNAL COMPANY
1200 MICHIGAN AVENUE, CHICAGO

NEW YORK OFFICE
239 West 39th Street

SUBSCRIPTION RATES
United States and Mexico
\$3.00 per year
Other Countries including
Canada \$5.00

Entered as Second-Class Matter September 19, 1892, at the Postoffice at Chicago, Illinois, under Act of March 3, 1879.

Invasion of Fall Fairs

THIS season is witnessing the invasion of the country fair by the motor car. Instead of waiting until the after-Christmas show at which to exhibit their 1911 models many of the car manufacturers are now making exhibitions of these at the country fairs scattered throughout the country. At some fairs a complete motor plaisance has grown up, and along either side is a row of tents in which are shown the 1911 models, attended upon with the customary glib-tongued salesmen who explain all about the cars and sends the inquirers away with a good supply of catalogues and pamphlets. The motor car has taken its place side by side with the harvesting machinery at the country fair so that the farmer who is interested in going to the fall fair to buy a new steam plow outfit, a new cultivator or any other type of farm machine cannot see these without running into the irresistible motor car which is on the ground and instead of remaining idle is generally being moved around to give the much desired demonstration.



SURELY this invasion of the fall fair is a case of bringing the ear to the door of the farmer. If Mahomet will not go to the mountain, then move the mountain to Mahomet. If there is any public occasion in the country seat in which the farmer feels he has an equal right with any other mortal in existence, whether he lives in the village or in the city, it is at the country fair. Here for years the farmer has been in the habit of bringing the best of his own products to meet in competition the best of his neighbors, and now the sacred regime of the horse at the fair has been molested and the biggest day has been turned over to the motor car. No better place to show the car to the farmer could be obtained than the country fair. It is easier to interest him in the car at the fair than it is to get him inside of a salesroom or a garage. Circumstances are great ameliorators of conditions and when a sale is to be made there is nothing like having all conditions and environments as favorable as possible. For this reason those car makers who have grasped the dynamic selling force of the country fair are to be congratulated because they are meeting the farmer face to face on his own ground, as it were, and more than that they are meeting him face to face at a time when his bank deposit is freshest, usually after the money from the wheat and oat crop has just been deposited. The fall is a better time to appeal to these farmers than the spring time.



ALTHOUGH some have suggested that the exhibition of the new model at the fall fair will prove an injury to the big motor shows in the winter and spring, it is more certain that the fall fair will have a direct benefit to such shows. It is a safe assertion that many will become interested at the fall fair and will visit the big show who otherwise would never have any idea of going to the national show. The more people who are interested in cars the more will attend the big shows and instead of proving detriments these fall fairs will become big feeders for the winter shows. Two years ago the motor car was ostracized from the fall fair but this fall it has proven the biggest attendance puller, and by next year the main attraction will be the motor races. So great is the interest in the fair races becoming that it is a question if a grand circuit will not have to be established so that manufacturers will have a good opportunity of exhibiting at many of the leading state fairs.

The Internal Movement

IF THE country roads in your section are but natural pathways, which in dry weather furnish clouds of suffocating dust, and in wet weather are quagmires impossible to motor or horse-drawn vehicles, it is foolish argument for you to claim that because you cannot build the finest macadam roads that you will do nothing for your roads. This is but another example of the boy and the filberts, who wanted to draw out of the narrow-necked bottle all the filberts he could hold in one hand, and because the neck of the bottle was too small, dropped them all and withdrew the empty hand. The improvement of the highway is an internal movement. It must be born in the minds of the people who live in the locality in which the improvements are to be made. If Massachusetts were to make a present of 100 miles of improved highway to the citizens of southern Illinois, that 100 miles of highway would not be worth the same to the Illinois citizens as it would to the New Englanders if built in their state.



THE hope for good roads rests with the community, and only in proportion as the good roads spirit is engendered in the minds of the citizens of the different communities so that they are prompted to individual and collective action, will the good roads movement grow. Making a present of 100 miles of good roads does not necessarily breed good roads spirit. This spirit is engendered by personal pride, communal pride, personal advantage and communal advantage. The individual must see that he will benefit, the community must see that it will benefit, and when they both see the good roads movement in this light, then they will both work, and work in harmony, and when the individuals and the community work and work in harmony, then the state is compelled to work and the federal authorities also.



IF one hundred men in a community will start improving their highways with a King drag, it is a certainty that before long that community will have good roads; first good dirt roads, later good roads oiled, and eventually the best form of stone or bitumen roads that can be secured. The good roads spirit grows like the motor spirit. In the early days the single-cylinder runabout satisfied; a year later the \$1,500 car was necessary; and soon the individual developed until only the biggest and best car satisfied. This is true in the motor car, it is true in other departments of life, and it will prove true with good roads, so that that community that wants to have the best roads in the state had better start making the best of what it has and progressing step by step, because if given the most approved roads of the day it would not even be able to keep such roads in repair.



WHAT is wanted in the good roads movement is the spirit of the river-to-river road in Iowa, where every farmer bordering on this road from Council Bluffs to Davenport is looked upon to do his share of dragging after a rain. Every time each farmer works, his feeling of ownership in the road increases, and in direct proportion as this feeling of ownership increases will his pride in the road increase and will his determination to make that the best road in the state develop. It is an internal force—a force born in the minds of the individual and not one poured in from a lecture platform to leak out the same or the following day. This force is like the seed which falls into the ground to grow and develop and make itself into a unit, and only by such growth can a permanent good roads era be created.

ROAD WORK IN TEXAS PRODUCES RESULTS

AUSTIN, TEXAS, Sept. 26—The agitation for good roads which has been going on in Texas during the last few years is beginning to produce wonderful results. Almost every county in the state is showing an interest in this improvement work. According to statistics recently gathered by the Commercial Secretaries' Association of Texas, the total amount of good road bonds that are to be issued by the different counties of the state during the year 1911 will reach approximately \$20,000,000. All of this money will be expended in improving the rural highways, in opening new roads and for the purchase of modern road-making machinery.

Next to the motor car owners and users the chief demand for good roads in Texas comes from the railroads. E. F. Yoakum, chairman of the executive committee of the 'Frisco railroad, has been active for several years in his advocacy of better highways. In order to encourage the construction of first-class rural roads in the territory covered by the 'Frisco system, he piloted a party of farmers from Texas and other states through the east about a year ago, as his personal guests. He took them on a motor trip over the magnificent highways of several of the New England states. Road construction experts made interesting talks at different places that the excursionists visited, and the subject of modern road-building was given a close study. The result of this personally conducted excursion by Mr. Yoakum is having far-reaching effects. The members of the party have spread the gospel of good roads far and wide through the respective states where they reside, and, as a result, the county officials are responding to the public clamor for better highways by submitting large bond issues to votes of the people, the proceeds of same to be used in the proposed improvements.

More bonds for the construction and improvement of highways in Texas have been issued during the last 6 months than in any similar period in the history of the state. Only a few years ago it was considered something remarkable for a county to issue \$100,000 of bonds for road improvement. These issues are now so common as to cause no comment. These county bond issues now usually range from \$150,000 to \$500,000. The most important thing connected with this good roads' movement in Texas is that the highways are constructed with the idea of permanency, instead of in the slip-shod manner in which the work was formerly done. The people have been educated in the art of road-building during the last few years.

The fact is so well recognized by the commercial interests and the people generally of the towns and cities of the state that first-class highways are promoters of trade and business, that the good roads' movement for the rural district has the

Lone Star State Will Spend \$20,000,000 on Highway Improvements During 1911

solid support of the people of the different communities. Frequently the agitation for road improvement in a particular locality originates with the townspeople. Not so very many years ago bond propositions of this kind were usually fought by the people of the towns.

ASKS TRUNK LINE HIGHWAY

Seattle, Wash., Sept. 24—Centralized effort to accomplish one project, namely, the construction of a trunk line highway across the Pacific coast from Mexico to Canada, is the turn that the meeting of



September 30-October 4—Third annual reliability of Automobile Club of Minneapolis.

October 1—Vanderbilt cup race.

October 1—Motor car day at state fair, Springfield, Ill.

October 1-2—Speedway meeting of Omaha

Motor Club, Omaha, Neb.

October 4, 5 and 6—Open air show and speed carnival, Kansas City, Mo.

October 6—Track meet at Des Moines, Ia.

October 6-7—Fall interclub reliability team match between the Chicago Automobile Club and the Chicago Athletic Association.

October 7-8—Track meet at Santa Ana, Calif.

October 8—Fairmount Park road race, Philadelphia, Pa.

October 8—Track meet of Danbury Agricultural Society, Danbury, Conn.

October 8—Races at interstate fair, Spokane, Wash.

October 10-12—Three-day track meet on 2½-mile dirt speedway, Amarillo, Texas, Panhandle Auto Fair Association.

October 10-15—Reliability run, Wichita, Kas.

October 10-15—Vehicle show in Coliseum, Chicago.

October 13-14—Track meet of El Paso Journal, El Paso, Tex.

October 14-18—Washington-Richmond reliability of Washington Post.

October 15-November 2—Show in Paris promoted by Aeronautical Society.

October 17—Nine-day good roads tour of the Atlantic Constitution.

October 21-22—Commercial vehicle test of Boston American.

October 27-28-29—Track meet at Dallas, Tex., of Dallas Automobile Club.

October 28-29—Commercial vehicle tests of New York American and Chicago American.

October 29-30—Reliability run in New Jersey, of Automobile Club of Hudson County.

November 3, 4 and 5—Race meet of Atlanta

Automobile Association, Atlanta speedway.

November 5-6—Track meet at New Orleans, La.

November 5-7—Los Angeles-Phoenix road race of Maricopa Automobile Club.

November 7—Track meet of Maricopa Auto-

mobile Club, Phoenix, Arizona.

November 10-12-13—Track meet at San Antonio, Tex.

November 7-11—Five-day reliability run of Chicago Motor Club, 200 miles a day.

November 24—Santa Monica road race, Los Angeles, Cal.

November 26-27—Motordrome meet, Los Angeles, Calif.

December 1-8—First annual aeronautical exhibition, Chicago Coliseum.

December 3-18—Annual salon of Automobile Club of France.

December 25-26—Motordrome meet, Los Angeles, Calif.

motor enthusiasts took that were gathered in Seattle, September 18-19, when the Pacific Highway Association was formed. It was the original idea of the promoters of the organization that a motor association would be formed including all western owners, but when the delegates assembled it developed that a wider influence could be exerted by a highway association than a motor car organization. Officers of the new association have been elected to serve until next July, when the first annual convention will be held. Judge J. R. Ronald, of Seattle, was elected president, with Charles A. Ross, of Vancouver, B. C., treasurer. The president was authorized to appoint a secretary. The Pacific Highway Association officers will organize either motor clubs or good roads associations in every town and city along and tributary to this international highway. Financial support for the carrying out of the immediate work of the association has been guaranteed by four clubs.

DEDICATE A HIGHWAY

Becket, Mass., Sept. 24—In the presence of 2,500 people, among them prominent motorists, and state and city officials, the famous highway across the Berkshires that wiped Jacob's ladder off the map was formally dedicated this afternoon. It was an impressive ceremony and began when Mrs. George Westinghouse raised the American flag as Bugler Clarence Treat of the militia sounded the call to colors. Motorists traveled across Massachusetts to attend. Lewis R. Speare of Boston, president of the American Automobile Association, was present and spoke for the association; Charles E. Fosdick, secretary of the Automobile Club of America, of New York, represented that body; Charles J. Glidden, who was the pioneer representative of touring; the mayors of five Massachusetts cities, members of the state highway commission and other prominent persons were on the field for the celebration.

Captain John Nicholson of F company, M. V. M., aide on the staff of Gov. Draper, directed the ceremony. As if the raising of the flag had been rehearsed, it was drawn slowly to the halliards, reaching the top of the pole as the anthem ceased. Then Mrs. Westinghouse bowed profoundly to the colors and said: "God bless the Stars and Stripes."

Then followed the unveiling of the big 3-ton boulder which set beside the pole which is to be the permanent marker on the summit and which will shortly have a bronze tablet for which President Eliot will be asked to write the inscription. Around this boulder were stones which had been brought from all parts of the world. A bit of a stone from Blarney castle, amethyst from Mexico, Chester granite, Lee marble, Longmeadow brownstone, were packed about the boulder at its base.

Detroit Satisfied With Fair Show

DETROIT, Mich., Sept. 26—Rain prevented the racing program that had been arranged for Saturday at the Michigan state fair. The fair officials had hopes, when the skies cleared at noon, that it would be possible to go through with at least a part of the program, but the track was in no condition to admit of any speeding and the large crowd that had gathered, in spite of the elements, was disappointed. At that, motor day was far from being a failure. People who had come to the fair in the expectation of seeing records broken flocked to the motor show when they found that the races had been canceled. What they saw there partially made up for their disappointment. In the fifty or more exhibits fully 100 makes of cars, the aggregate value of which was more than \$1,000,000, were represented. It was easily the best attraction on the grounds and, in many respects, the most successful show ever held in Detroit. The fair officials say that the erection of the permanent motor building was one of the best investments they ever made. For next year's show the interior walls will be plastered and numerous other improvements are contemplated.

Find Fault with Location

Some dissatisfaction is expressed by the dealers over the location of the building. It is in a rather isolated part of the grounds and the main entrance has been placed on the side furthest away. It is understood, however, that the fair management contemplates erecting other buildings near it, so these disadvantages will not be so manifest in another year or so.

The dealers, for the most part, are well pleased with the results of the show. It is estimated that the sales made or practically closed through this medium will aggregate nearly \$400,000. This, of course, naturally includes a number of sales to agents, but many others were made direct, the purchasers being principally farmers and out-of-town business men. While practically all the exhibitors showed 1911 models, the cars sold were, with few exceptions, 1910 models. The E-M-F Co. tried the very effective plan of having its agents from all over the state come in with prospective customers, who visited the show as guests of the company and also were escorted through the factories.

Just now Walter E. Flanders appears to have his hands full looking after his motor interests. Plant No. 8, it is announced, will be established shortly at Fourth and Abbott streets. The company recently took over the factory of the Detroit Bag Co., at that location, and is now installing machinery for the manufacture of tops exclusively. The company is still advertising for men for its 30 and 20 plants and work on the 1911 output is progressing at a lively rate.

For a week past the Packard Motor Car Co. has been taking on men at the rate of more than 100 per day and now has about 5,500 employees on its pay roll. This is not

surprising when it is considered that the Packard, in the last few months, has added 9½ acres to its floor space and installed \$110,000 worth of new machinery. Work on the new 3,000-horsepower engine and on the new power plant for the foundry is being pushed. The machinery for the new drop forge plant is expected to arrive in 2 weeks and when it is installed there will be another large addition to the pay roll.

"We are pounding the factory for a full capacity output," said General Manager Alvan Macauley. "Requests from Packard dealers for delivery dates indicate a very healthy condition of trade. We can see nothing ahead but a healthy increase in business."

Packard's Summer Statement

The company has given out a statement showing that 928 cars were manufactured and sold during the months of June, July and August, as against 524 cars for the same period in 1909, an increase of 404 cars, or 77.1 per cent. The month of August was the busiest in the company's history. The record for the 31 days is 451 cars and sixty trucks. In the figures given for the 3-month period, trucks are not included.

Things are humming at the big Buick plant in Flint, following the closing of negotiations for a \$2,500,000 loan in Boston, as announced last week. One of the first changes inaugurated by General Manager Nash when he took charge of the business was the appointment of Dr. E. R. Campbell, son-in-law of W. C. Durant, as head of the general sales department. He succeeds Henry E. Shiland, who will henceforth have charge of the business in the Pacific coast states. The renewal of activity in the Buick factory has served to set at rest many of the wild rumors that were afloat here, involving the industry generally.

Motor Patrols for Detroit

The motor patrol now is a full-fledged reality in Detroit. The patrol put in commission by the police department in the first precinct a few months ago, as an experiment, proved such a success that Commissioner Croul had no difficulty in securing a liberal appropriation for the extension of this service. Six new machines were turned over to the department Saturday by the Packard Motor Car Co. and they will be placed in commission as soon as they can be equipped with stretchers and other paraphernalia that will be used in connection with them. They will replace about a dozen horse-drawn patrol wagons. The experimental machine has covered 13,000 miles during the short time it has been in use. The department also has established a flying squadron, an Olds Autocrat having been purchased for this innovation. The motor patrols also will serve as ambulances when the necessity arises; hence the stretchers on the cars.

heralded by the appearance on the streets last week of a monster truck known as the Quadra, a four-wheel-drive affair designed for heavy work, with a capacity of 10 tons. It was designed by Rodolphus Fuller, of this city, and is the result of 6 years' experimenting. The motor is separate from the wheels and is not affected by jarring, the current being carried to the wheels through wiring in the center of the king pin. A gasoline engine generates the electricity while the machine is in motion, doing away with the necessity for a storage battery. A company is now being organized to manufacture the truck here.

Senator John N. Anhut, formerly president of the Anhut Motor Car Co., now the Barnes, has been much in the public eye the past few days. The filing of an application for a capias for his arrest started the ball rolling and since then the papers have been devoting columns of space to the youthful promoter and his various enterprises. The capias was issued in connection with a suit started by Charles L. Richardot, a stockholder in the Specialty Knitting Co., to recover \$2,000 which he claims Anhut owes for stock. Anhut bought \$3,000 worth of stock when the company was hard pressed for \$1,000, and afterwards sold it at a profit. The senator furnished bail for his appearance and was not taken into custody. He charges that the suit is a conspiracy on the part of his political enemies, and in the meantime he is still canvassing for votes. He is a candidate for reëlection. Directors of the Barnes company met Friday to discuss means of collecting \$20,000, which, it is claimed, Anhut owes the concern for stock sold. The matter was left in the hands of the company's attorney.

MAXWELL AND COLE WINNERS!

Louisville, Ky., Sept. 25—At the conclusion of the second annual reliability and economy contest of the Louisville Automobile Club, the Maxwell entry, driven by T. L. Marshall, was awarded the reliability cup, while a Cole, piloted by A. L. Martin, who drove a car of similar make in the 1910 Glidden tour, captured the economy trophy. The run started last Tuesday and ended Thursday, the cars having covered a distance of 433 miles. There were six entries in the reliability class and two in the economy division, but before the start the Oldsmobile and Cadillac cars were withdrawn from the contest. The following official cars were entered: Cole 30, press; Packard, pacemaker, and Oldsmobile, confetti.

After 3 days spent in analyzing the records Eugene Straus, referee of the contest, and representative of the American Automobile Association, announced the names of the winners last night. It was necessary for the American Automobile Association officials to decide one of the technical points which developed during the examination of the contesting cars. The record made by the Maxwell was a remarkable one. On the first day the car made a perfect score and was penalized only 1 point on the second

day when the motor stopped for 1 minute, while a loose lamp was being adjusted. On the third day this machine also made another perfect score, despite the fact that almost indescribable hardships were endured. The technical examination of the car revealed a $\frac{1}{2}$ -inch spread of the felloes on the rear wheels, a lost bolt in one of the mud pans and, in the brake test, the machine went over the limit a distance of 19 feet 6 inches and was penalized 20 points. For the spread in the felloes and the lost bolt the car was penalized 11 points, making a total penalty of 32 points. The Hudson, entered and driven by A. L. McCormick, ran second to the Maxwell. The total road penalties assessed this car were announced as 16 points. The technical examination developed a bent steering tie rod, which resulted in a penalty of 25 points, while a broken electrical terminal added an additional 2-point penalty. The total penalty against the Hudson was 43. The third entry in the reliability division, a Regal, entered and driven by W. H. Emler, was penalized over 1,400 points for dropping out of the contest. The car was unable to finish because of a broken spring.

The economy contest produced considerable surprise. This was won by a Cole 30, which covered the entire distance on $27\frac{1}{2}$ gallons of gasoline, or 16 miles to each gallon of gasoline on unusually heavy roads.

PACKARD GETS ROAD RECORD

Philadelphia, Pa., Sept. 26—One hour and 10 minutes was knocked off the Pittsburgh-Philadelphia overland record last Tuesday, when S. D. Waldon, vice-president of the Packard Motor Car Co., driving a 1911 Packard 30 touring car, covered the 303 miles over the mountains between the two cities in 12 hours 51 minutes. The trip was made with just one stop—11 minutes at McConnellsburg for gasoline and oil. The previous record of 14 hours 1 minute was made by Waldon, September 12, 1908. The first 175 miles of this trip is entirely over mountains, and the road is a particularly difficult one on account of its worn condition. On the trip last week Waldon started from Pittsburgh at 3:45 a. m., reaching Bedford at 8:20—4 hours 35 minutes, without a stop. McConnellsburg was reached at 10 o'clock, 23 minutes ahead of the previous time, no stop having been made until then. After refilling with gasoline and oil, the flying trip was taken up and the car sped on to Philadelphia without a stop, reaching the North Broad street garage of the Packard Motor Car Co. of Philadelphia at 4:36 p. m., Waldon doing that part of the run in 6:25:00. The original purpose of the run was to give several Packard dealers a mountain tour, the Packard company having promised a trip of this kind to the leaders in truck-selling proportionate to the pleasure-car business of the respective Packard dealers. On the 2 succeeding days a return trip was made via the National pike, through Baltimore and Cumberland.

The Nebraska-Iowa Sociability Run

OMAHA, Neb., Sept. 26—The Omaha News-Des Moines Capital sociability run, participated in by sixty owners on Wednesday and Thursday of last week, was originally scheduled to continue for 3 days, but rain interfered on the second day and the last leg of the journey from Des Moines to Omaha was made by train. The winners were as follows: Omaha Daily News cup, D. E. Moon, Des Moines; Omaha Motor Club and Iowa Automobile Club joint cup, H. E. Fredrickson, of Omaha; medal for sociability queen, Miss Bessie Amos, Omaha; Big Noise Bill medal, Harry Weller, Omaha; hard luck medal, E. E. Crawford, Des Moines; Daredevil Dick medal, A. W. Eggleston, Des Moines; tire buster medal, J. J. Van Oel, Des Moines; road hog medal, Jackson Byers, Des Moines.

The Rules Used

There were thirty-five cars from Omaha and twenty-five from Des Moines. The Des Moines motorists, led by Colonel Lafe Young, editor of the Des Moines Capital, left the Iowa capital at 7 o'clock Wednesday morning, headed for Omaha. The river-to-river road was in fine shape and the motorists arrived in Omaha in good season, about 6 o'clock in the evening, all except E. E. Crawford, who had tire troubles. At Omaha the Des Moines party was met by a reception committee comprising the Omaha entries, and the motorists of both cities were the guests of the Omaha Daily News at a smoker.

The following morning the Des Moines party started home, this time accompanied by the Omaha motorists. They had not proceeded more than an hour when it began to rain. At Avoca, Ia., some turned back, and from that point on contestants dropped out one by one, many seeking shelter at farmhouses and some of them finding accommodations only in farmers' barns. By nightfall several scores of cars were strung along the river-to-river road from Council Bluffs to Des Moines. Only five of the number finally completed the trip, and one of these was a woman. H. E. Fredrickson, of Omaha, in a Chalmers 30, arrived in Des Moines at 6:38 in the evening. The second car pulled in $3\frac{1}{2}$ hours later. It was a Packard, driven by Louis Nash. Miss Bessie Amos, of Omaha, in a Chalmers 30, was the last of the Omaha arrivals, at 1 o'clock in the morning. With her were her mother and Al Gordon.

Only two Des Moines entries got through. Jackson Byers and party, in a Stevens-Duryea, arrived at 11 o'clock, and R. J. Clemens and party arrived after midnight, in a Paterson. Those who made the trip by car were surprised to find most of their fellow-contestants there when they arrived. They had taken the train.

The following day the motorists were tendered a luncheon by the Des Moines

Capital. The trip back to Omaha which the Omaha party was scheduled to make was abandoned, as the rain continued for 2 more days.

At the Des Moines luncheon the trophies and medals were awarded and caused much merriment. D. E. Moon, of Des Moines, captured the Daily News cup for the trip from Des Moines to Omaha. Moon came within 40 minutes of making the arbitrary schedule, which was 18 miles an hour, it being announced previously that the arbitrary speed was between 17 and 19 miles. H. E. Fredrickson captured the cup offered by the Omaha Motor Club and Iowa Automobile Club, coming within 4 minutes of the arbitrary schedule of $15\frac{1}{2}$ miles an hour, on an announced schedule of between 15 and 16 miles. The calling off of the run back to Omaha left the cup offered by the Des Moines Capital unclaimed, and a committee was appointed to arrange for another run to decide the winner of the Capital cup. This second run is planned to be held from Omaha to Guthrie Center, Ia., and return the same day. At Guthrie Center the Omaha drivers will be met by the Des Moines motorists and a luncheon will be served there by the residents.

Sixty Cars in Test

Briefly, the rules which governed the run were: Every car started with a perfect score of 1,000; there was a blind schedule and control at every town; 1 hour was allowed for noon control; 1 point demerit was given for every minute or fraction of minute variation from the arbitrary time established for completed run; there was no demerit for being behind schedule so long as driver was within the arbitrary time limit at each control; the entrant who came the nearest to making certain blind controls on the time arbitrarily set, and who came the nearest to completing the run in the unknown time limit, was awarded the cup for that day; no technical examination of cars is made; participants may stop their cars at any time to pick flowers or watermelons.

The route between the two cities was as follows:

Towns	Miles	Towns
Des Moines	15.2	Waukeen
Wankee	6.9	Adel
Adel	10.2	Redfield
Redfield	15.4	Monteith
Monteith	6.4	Guthrie Center
Guthrie Center	25.2	Exira
Exira	2.3	Oakfield
Oakfield	16.4	Atlantic
Atlantic	7.6	Marne
Marne	6.4	Walnut
Walnut	6.7	Avoca
Avoca	16.7	Minden
Minden	4.7	Neola
Neola	6.3	Underwood
Underwood	6.3	Weston
Weston	8.7	Council Bluffs
Council Bluffs	4.8	Omaha
	166.2	

From Des Moines read down. From Omaha read up and backwards.

Despite all these hardships and the rain the participants in the run all had a most enjoyable time and are willing to start in another. Undoubtedly the trip did a lot in arousing good roads enthusiasm.

Facts About World's Rubber Output

WASHINGTON, D. C., Sept. 26.—Of interest to the tire trade are the reports from United States consuls in Brazil, Mexico and East Africa concerning the rubber cultivation, which have just been published in the government organ, the Daily Consular and Trade Reports. The report on the Brazil situation is made by Consul George H. Pickrell, of Para, who points out the situation in that country. According to the consul, while prices have ruled high during the last 3 years, the present tendency seems downward. This, some think, is due to the fact that American manufacturers, in order to secure lower prices, are holding off from buying, but others claim that the low prices that exist at present are due to the fact that English stock traders, failing to realize a profit on the rubber they bought some time ago, under the impression that prices would go up, have sold their holdings at forced sale.

Brazil's Rubber Output

Authorities say that the amount of this rubber, according to the books, was quite large, but the consul reports that the actual amount of rubber really delivered was not over 50 tons. This he believes shows that real holders of rubber are not selling and their action can only be accounted for on the basis that they expect to see much higher prices. The exports of rubber to the United States in 1910 were about 2,000 tons fewer than in 1909 and 4,810 tons fewer than the exports to Europe. This, however, is due to the diversion of direct shipments to Europe, which has given rise to rumors that by shipping to Liverpool the exporters have the advantage of the facilities offered for speculation in the London market. If this diverting of direct shipments is to continue, the consul thinks it will be to the disadvantage of American importers, who need all existing facilities and more, if it is possible to get them, and any loss in tonnage will be to their disadvantage. Reports received indicate that the coming year's crop will be slightly in excess of the last, provided there is no increase in the sick rate among the gatherers, of which there is some fear, owing to the appearance of small pox. Notwithstanding all the precautions taken to protect the health and lives of the people engaged in the rubber business, further indication of its unattractive nature is shown in the small increase in production, which is 3 per cent, although it is said an effort was made to induce additional men to accept service.

The consul sends a statement showing the receipts of rubber by crops at Para during the years ending June 30, 1909 and 1910, in tons of 2204.6 pounds. In 1909 there were 30,062 tons of rubber and 8,008 tons of caoutchouc, a total of 38,070 tons. In 1910 the total was 39,230 tons, of which 31,501 tons were rubber and 7,729 caout-

choue. The exports from Para, Manoas, Itacoatiara and Iquitos during the year ending June 30, 1910, shows a grand total of 38,953 tons, of which 17,071 went to the United States. On June 30 the stock on hand totaled 1,190,200 pounds.

Consul Albert W. Brickwood, Jr., of Papachula sends in an exhaustive report on the rubber industry in Mexico. He estimates the number of rubber trees in the Palenque district at from 9,000,000 to 10,000,000 trees. He points out that Mexico is a pioneer in rubber culture and that it has plantations more than 25 years old. For many years Mexico has been one of the largest producers of rubber and its exports have reached enormous figures. While a small amount of this was guayule rubber, the largest proportion was of the cultivated product. Chiapas holds the supremacy in rubber-planting, having a larger acreage under cultivation than all the rubber districts in Mexico. In the department Soconusco the El Suchiate plantation was the first to plant rubber in Mexico. This plantation covers 15,000 acres and while a number of old trees are there a new planting has been set out, consisting of 100,000 trees of from 1 to 4 years of age, while rubber trees on the estate yielded 2,000 pounds of rubber in 1909. In this same department is the La Zaculpa plantation, which is controlled by the Zacualpa company, which also has in charge seven other concerns, all organized since 1899. This forms the largest rubber plantation in the world, embracing a section of more than 29 square miles. The planted area on the united plantations is 9,500 acres on dark sandy loam on level land and 8,300 acres on heavier soils of fertile, well-drained land, with about 7,000,000 trees under actual cultivation, while preliminary work is being done with the intention of planting immediately 5,000 acres more. Mexicans and Indians are employed on the plantation, receiving 25 cents gold per day and rations, being paid at the end of each month.

Mexico Important Factor

The first rubber shipped from this plantation in 1901 was from wild trees and from trees planted by the original owner. Since then the output has steadily increased, until in 1907 it amounted to 40,000 pounds, in 1908, 60,000 pounds, and in 1909 to about 80,000 pounds. It is expected that the output for 1910 will exceed 100,000 pounds of crude rubber. The yield per tree for each tapping in 1908 was 2.5 ounces. Although the large trees were subjected to a severe test of three tappings per year, they are as thrifty as can be desired. In 1907, 260,000 different tappings were made without any noticeable harm being done to the trees. There are five other large plantations in this district.

In the district of Tonala there are three rubber plantations, while in the district of

Palenque there are eighteen, of which the most important is the El Chival, owned by a Chicago company, which takes in 15,000 acres of land, of which 1,600 are planted in rubber. There are between 8,000 and 10,000 6-year old rubber trees on this plantation. At the end of 1908 the estimated number of trees on the estate was 600,000, with about 800 trees to the acre, which, however, will be gradually thinned out to about 200 trees per acre as a permanent stand.

From Portuguese South Africa

Consul George A. Chamberlain, of Lourenco Marquez, reports for the province of Mozambique in East Africa. He states that while the natural resources of the provinces are but slightly developed, rubber there has been exploited commercially for over half a century, and the possibilities of its development into a great source of revenue had become probabilities at least during the last few months. From Lourenco Marquez, at the extreme south, to Ibo, at the northern extremity of Portuguese East Africa, landolphia of various species grows in profusion. South of the Zambezi the landolphia is a vine sometimes of great length, and when permitted, attaining the thickness of a man's arm. This vine is considered rubber-bearing when it reaches $\frac{1}{2}$ inch in diameter and is tapped by a series of long blazes. The flow is freest at the end of the rainy season and, owing to the great difficulty of getting at the vine, whose habitat is naturally the forest, they are tapped but once a year and then bled for all there is in them. This naturally reduces the output of a forest, and where supervision of the natives is impossible the percentage of vines destroyed yearly is very great. Where the rubber is collected by organized companies, steps are being taken to restock the depleted forests, which is not difficult. The landolphia grows well from a slip and before the rubber-gathering season opens the idle men are sent through the forests and plant two slips to every tree that has no vine at its roots. This method of saving a forest, however, only benefits permanent holders or the state, as it takes landolphia 5 to 10 years to reach a tappable stage. Outside of the territory covered by the Mozambique and Buzi company the collection of rubber, whether south or north of the Zambezi, is entirely in the hands of unsupervised natives who collect and sell it to the Indians on the coast. The exports of rubber from the different ports of the province during 1909 amounted to a total of 378 tons.

STIR UP ROAD ENTHUSIASM

St. Louis, Mo., Sept. 26—As a result of the trip of the St. Louis Times pathfinder, a continuous stretch of good road between St. Louis and Arcadia, Mo., is assured, and residents along the way are making plans to improve the highways not directly on the route. The car, an Overland, carrying State Immigration Commissioner Curran; J. E.

Foland, official pathfinder, and a representative of the Times, with C. E. Goldthwaite at the wheel, left St. Louis September 19 and returned last Friday. Good roads meetings were held in De Soto, Bonne Terre, Flat River, Farmington and Ironton. All the meetings were well attended by farmers, merchants and car owners. Speeches by Immigration Commissioner Curran and Pathfinder Foland in agitation of good roads received hearty support. The citizens of Ironton and Arcadia by personal subscription raised enough money to put in excellent condition the roads in their vicinity. Judge Mitchell of the St. Francois county court assured the pathfinding party that 16 miles of bad roads near Bonne Terre will at once be put into the best of shape, as a result of their efforts. He also promised to have rushed to completion a bridge over Big river, which forms an important link in the proposed highway. At the meeting at Flat River it was decided to have State Highway Engineer Curtis Hill build several miles of new road out of the best material obtainable. The citizens of the De Soto district recently voted \$30,000 in bonds for the improvement of the roads, and the meeting called at De Soto by the pathfinders brought out an enthusiastic gathering. All of the meetings were well attended and good roads sentiment was found in abundance all along the route.

MAKING VAGRANTS USEFUL

Kalamazoo, Mich., Sept. 26—Kalamazoo county, which claims to be the first county north of the Mason and Dixon line to have used county prisoners in road building, has 32 miles of good roads which have been built by vagrants and other petty offenders since the Michigan law, authorizing the county prisoners to be employed for such a purpose, went into effect last year. In starting the work last spring a road-building outfit was purchased out of the \$50,000 voted by the county for road-building. A large wagon-jail was built and a complete camp outfit was provided. For several weeks the prisoners were engaged in clearing away rubbish from the road ways and preparing them for resurfacing. Two miles of good roads is being built in each township, and when the present system is finished within 5 years every main road in Kalamazoo county will be a graveled turnpike. Near where the roads were to be improved a gravel pit was purchased at small cost. Teams were hired and the town drunkards and loafers were placed in the pit at shoveling gravel. Another gang was busy on the road preparing it for the gravel. Fortunately the county has been able to have on the gang practically all the time a cook and a barber who have cared for the camp, making it necessary to employ only two officers, who direct the road building under instructions from Chief Engineer John Marshall of the United States government highway service. The tramp is not as good a workman as the man who sometimes imbibes too freely.

Expert Talks to Tire Men at Akron

AKRON, O., Sept. 24—Henry C. Pearson, editor of the India Rubber World, of New York, addressed the branch managers, sales agents and office men of the Firestone Tire and Rubber Co., Friday night. He declared Akron to be the only real rubber city in the world, and the greatest. Mr. Pearson said that he could see no end to the possibilities in the rubber manufacturing business.

"The business is bound to grow; there are no limits to it," he said. "Do you suppose Dr. Goodrich, who was a wise man, would have confined the rubber business of the future to any one company had he made any predictions when he founded the vast trade this city now has? Not at all. It seems to me there is room for all the companies. The manufacture of rubber is the greatest and most remarkable business in the world. There are so many various uses to which rubber can be put; they are unlimited. Rubber is not exactly a necessity, nor is it a luxury. And rubber manufacturers are the most resourceful business men I know of."

While Mr. Pearson said personally he believed the motor car business would not be quite so large next year as it has been, yet he could not predict whether the price of crude rubber will go up or down. "Tell me what the demand for crude rubber will be and I can tell something what the price will be," he said. "The supply of crude rubber is unlimited, and the demand for it for manufacturing purposes will ever increase. The fluctuations in price depend upon the proportion of the demand to the extent with which the raw product is marketed."

Sixty branch managers and general agents of the Firestone company gathered for a 2 days' conference, during which time plans for the next year were laid. At the banquet Friday night A. C. Miller, of Chicago, one of the directors, gave an interesting account of the trip to Europe made by himself and President Firestone. The company officers reported a large business the past year. Following are the branch managers who were present: New York, D. C. Swander; Boston, T. J. Glenn; Philadelphia, W. R. Walton; Chicago, F. H. Martin; Pittsburg, C. E. Jackson; Detroit, J. V. Moore; St. Louis, W. F. West; Seattle, E. L. Campion; San Francisco, C. C. Eichelberger. The general agents from coast to coast were present.

At the annual meeting of the Swinehart Tire and Rubber Co. this week reports for the past year were made as being very favorable, and the prospects for the coming year were stated to be very bright. A report was made that the company had secured the largest truck tire contract ever taken for commercial vehicles. Enough orders have already been booked to keep the plant running to its full capacity, it was stated.

The stockholders elected directors as follows: William Byrider, August Blessman, Joseph Dangel, R. A. May, F. B. Theiss, J. A. Swinehart, W. W. Wuchter. These chose the following officers: W. W. Wuchter, president and general manager; J. A. Swinehart, vice-president; C. A. Baughman, secretary; R. A. May, treasurer.

BOSTON SHOW OPEN ONE

Boston, Mass., Sept. 26—The next Boston show will not be a closed exhibition from which unlicensed cars will be excluded, as many people identified with motoring believed. It is known that an attempt was made to have the unlicensed cars kept out; in other words, the association was asked to go on record in favor of a licensed show only. That was some months ago, however, but no such announcement ever was made; so next March the cars of both factions will be shown under the one roof. The anxiety of some of the dealers who did not know where they were at was relieved today when they got the annual blanks, with diagrams, applications for space, rules and regulations, etc., and they found there was nothing in it referring to the prohibition of unlicensed cars. The printed matter was sent out yesterday by Manager Chester I. Campbell, and it contained a brief note stating that all applications should be turned over to him right away, as the allotment for car space would be made early in October and the space for the accessory exhibitors the latter part of the month. By November 1 the Boston Automobile Dealers' Association will know just where it is at in the way of exhibitors.

There has been such a big increase in the number of agencies established in Boston this year that it is possible that the building will not be large enough to satisfy everyone, and so there may be some applicants left out. But it will not be on account of the car that is represented. There is nothing in the application blanks that says under what auspices the show is to be conducted. The rules and regulations are similar to those that governed other shows, with the possible exception that the management reserves the right to prohibit more than one car or chassis of the same model. Unless there is something radically different about a second car that cannot well be explained on the first one, it will be shut out if there is need of room. The show space will cover 105,000 square feet and the exhibition will open Saturday night, March 4, and continue through until March 11. The first floor will have the pleasure cars, the basement the commercial vehicles, and the accessory men will be put up in the balcony. The double-check system in use at other shows will be inaugurated here. There is every reason to believe that the show will be a large one.

LATE BUILDING OPERATIONS OF MOTOR TRADE



FIG. 1—ONE NEW MAXWELL-BRISCOE BUILDING

NEW YORK, Sept. 24—Novel methods have been adopted by the Maxwell-Briscoe Motor Co. in reclaiming for factory expansion a large tract, now under water, lying between the company's two plants at Tarrytown and Kingsland Point, N. Y. The entire area in process of reclamation is known as Kingsland cove, an unnavigable body of water from which river craft is protected by the Kingsland Light. In all, the cove covers over 20 acres.

What eventually will become the permanent bulwark along the Hudson now is only a chain of old barges, B, Fig. 3, stretching across the inlet of the cove, K. These barges are firmly anchored to huge piles driven well into the river bottom and when the space between the barges and the shore has been filled in, the barges will form a sturdy bulkhead.

Twenty-one already have been used and twenty-seven have been purchased to complete the work.

While reclamation is going on, the erection of new factory buildings and additions to present ones also is in progress under a general plan that will provide more than 80,000 square feet of floor space and still leave a large tract for future plant expansion. At the same time, the company has spent more than \$165,000 in new machinery and equipment of the most modern design. That there has been considerable space pressure at these plants is shown by seven new buildings now in course of construction. Incidental to the general plan of enlargement which has been necessitated by the growth of Maxwell business, the company has begun work on the following buildings: Experimental and engineering department building, three stories 50 by 175, of brick construction, equipped with modern machinery; administrative building, three stories in height 50 by 150 feet, surmounting Kings-

land knoll; motor-testing shop, 50 by 125 feet, with a 50,000-gallon gasoline tank adjoining, set upon a concrete cradle; parts and repair department, 50 by 200 feet, of saw-tooth roof construction and modern apparatus, for ventilating, lighting and heating; aluminum foundry, two stories in height, 60 by 75 feet, adjoining the present bronze and brass foundry; woodworking shop 75 by 75 feet, of saw-tooth design and new receiving and shipping sheds which will accommodate twenty freight cars on one siding and twelve on another.

One of the basic economies effected by the Maxwell-Briscoe company incidental to the recent expenditure of \$165,000 for new machinery and equipment, has been a marked reduction in cost and a great increase in the production of their foundries at the Tarrytown plant. This has been accomplished by the adoption of a new method of pattern-making, the invention of Hugh McPhee, superintendent of the Maxwell foundry. The method has been thoroughly tried out and is a permanent department in the Maxwell factory. In fact, a new building for the making of aluminum castings which is being added to the bronze and brass foundry, is especially equipped with features adapting it to the new system.

In preparing patterns to be used in moulding machines it was noted that many patterns were not adaptable to ordinary match plate work, because of a lug, boss or any other projection being off center, thus preventing a straight parting line. This entailed a considerable amount of bench work on the patterns, from which thousands of castings are required, or else the adoption of some way of mounting them other than those which have heretofore been tried.

By the McPhee system, patterns with

an uneven parting line are as easily mounted as are those with a straight parting line on plates for use in a vibrator machine or for bench moulding, and at much smaller cost than any other method.

A master pattern of the required casting is first made in wood. From this enough white metal pattern castings are made to fill the flask. After finishing the white metal master patterns, the services of the pattern makers are dispensed with, all the rest of the work in making the plate being done in the foundry. A perfect mould of these patterns, both novel and cope, then is rammed up and after taking the flask apart, and drawing the patterns, metal is poured into each impression separately, until it is filled flush with the parting line, a small ladle being used for the purpose. This is done in each half of the mould which has been left apart since drawing the master patterns.

Iron frames, which take the place of the plates on which patterns are generally mounted for the machine moulding then are placed on each half of the flask, and a composition poured into them until they are solid. These frames are made to fit the flasks perfectly. The composition with which they are filled is held in place with the bead around the inside of the frame. Cross bars act as a reinforcement for the composition and stiffen the entire plate. These plates may be used equally as well as the machine, or on the bench, but in either case, the flasks must be perfectly interchangeable in every way with the pins on the plate.

Another example of economic equipment in the Maxwell foundry is the use of three Rockwell rotary furnaces and one M. R. V. furnace, the latter being an English product which burns coke. For temperature regulation as well as reduced fuel consumption, this furnace has proven superior to all others which the company has used.

RUSH WORK ON REPUBLIC PLANT

Youngstown, O., Sept. 26—Work is being rushed under the greatest pressure on the erection of a modern fireproof building 200 feet long by 80 feet wide and five stories high to be devoted exclusively to the manufacture of Republic tires. The building is of the approved underwriters' type, of steel and reinforced concrete construction, and when completed will require an addition of 300 skilled workmen to the present large force. The Republic plant is unique in that all the machinery and equipment are made in the company's own shops.

NEW GRAMM PLANT AT LIMA

Lima, O., Sept. 24—The Gramm Motor Car Co. is erecting a modern plant for the building of commercial cars. The buildings are of reinforced concrete, having a floor space of 123,000 square feet, and constructed from the late designs,

every attention being paid to light and sanitary conditions. The plant is so arranged as to facilitate the work of each department. When in operation there will be no retracing of steps. Every piece of material will follow a straight course from the time it enters the factory in the shape of raw material until it is turned out, a finished product. The plant is conveniently situated to two railroads, so as to make shipping facilities the very best.

MOLINE AGAIN ENLARGES PLANT

Moline, Ill., Sept. 27—Driven by the steady increase in the demand for its product, the Moline Automobile Co., of East Moline, Ill., is making another addition to its plant in the form of a saw-tooth testing building. It has just finished the re-surfacing of its testing track, which is 16 feet wide and $\frac{1}{4}$ mile long, with cement 8 inches thick. In the middle of this track a large chassis-testing building is being placed. This building will have a novel feature in the way of heating, the pipes being placed in the concrete of the floor, thus getting rid of the objectionable cold floor which is common when cement flooring is used in buildings which are more or less open. The R. & V. Engineering Co., manufacturer of gas, gasoline and distillate engines, an allied concern, is also building a large warehouse and adding another 250-horsepower boiler unit to its power plant. The total investment amounts to \$55,000.

POPE COMPANY'S REPORT

Hartford, Conn., Sept. 24—Of much interest to the motoring public is the second annual statement of President Albert A. Pope of the Pope Mfg. Co. to the stockholders for the fiscal year ending July 31, 1910. According to the president's report, the sales for the past year were \$4,010,199.94, which represents an increase of \$1,106,458.53 over the preceding year. The net earnings amount to \$745,398.87. During the past fiscal year the company has bought the old tube mills now known as the west works, this plant having been originally constructed by the late Colonel Albert A. Pope for the manufacture of tubes for Columbia bicycles. According to the report three plants are now operated by the Pope Mfg. Co., the main works on Capitol avenue, the west works adjacent to the Hartford Rubber Works Co. and a bicycle plant at Westfield, Mass. The cars proper are made at the Capitol avenue plant, bodies at the west works and bicycles in Westfield.

President Pope in his report says: "While the prospect for business for the new fiscal year is encouraging, the management believes, in view of financial conditions throughout the country, that the conservative policy it has followed should be continued and no material expansion should be considered, and by keeping the affairs of the company well in hand, it can take care of as much business as its plant can produce, or contract its production, if conditions demand, to a point of economy and financial safety."

Of the earnings of \$745,390.87, \$664,496.35 was income from operations after deducting manufacturing and producing costs, including charges for depreciation, current repairs, replacements and renewals to plant, administrative, office and selling expenses. Miscellaneous earnings, including discounts, interest and royalties received, increased the above sum by \$127,989, but a reduction of \$47,095.48 had to be made for miscellaneous losses and expenses, including discounts, provisions for losses in bad and doubtful accounts and paid and accrued internal revenue tax on income.

The balance sheet shows that assets July 31, 1909, were \$5,194,835.16 and to this were added net adjustments amounting to \$50,767.37, and there was deducted for unoperated machinery and tools sold or scrapped, \$2,207.97. The expenditures on additions and improvements were \$334,851.10 and deferred charges and prepaid expenses were \$100,308.56 and contract to be liquidated and by deferred installments was \$190,871.41. Inventories of materials, supplies,

work in progress and finished products were \$854,660.45. Accounts and notes receivable were \$273,578.60 and cash was \$557,945.09. The Pope company's report was well received by the stockholders of the concern.

TRUCK PLANT FOR MILWAUKEE

Another big commercial vehicle plant will be erected in Milwaukee, Wis., this winter. The Stephenson Motor Car Co., Eighth and Wells streets, Milwaukee, has increased its capital stock from \$50,000 to \$100,000 and will greatly enlarge its facilities for building the Utility delivery car. It is proposed to build a large plant in the city or in one of the suburbs, probably South Milwaukee. The Stephenson Motor Car Co., which succeeded the Solliday Motor Car Co., as representatives of the Speedwel, Staver-Chicago and Brush cars, began the manufacture of the Utility commercial car about a year ago. The big garage and shop at Eighth and Wells streets in Milwaukee will be leased to an agency and garage concern. This now makes Milwaukee even more than a truck center than before.



FIG. 2—T SHOWS TRACK USED TO FILL COVE K WITH FILLING F IN THE RECLAMATION WORK FROM THE HUDSON RIVER BY MAXWELL-BRISCOE MOTOR CO. AT TARRYTOWN, N. Y.



FIG. 3—THE MAXWELL-BRISCOE RECLAMATION WORK ON THE HUDSON RIVER AT TARRYTOWN, N. Y., CONSISTS IN ANCHORING A LINE OF BARGES B ACROSS THE FRONT OF THE COVE K AND FILLING IN THE COVE WITH EARTH FROM FACTORY EXCAVATIONS



RUBBER STORM BLANKET SERVES AS A TOP



VACUUM BOTTLE LUNCH OUTFIT IN TIRE TRUNK

OFFICIALLY the summer of 1910 reached the last control on Friday, September 23, and checked in on time, and now the motoring world is enjoying the beautiful autumn, with its fine roads, magnificent weather and grand scenery. Threateningly there looms up ahead grim old winter, when touring for pleasure ceases and the motor car is used as a necessity rather than a means of pleasure transportation. Your touring motorist, though, has learned much during the past season, for experience is a good teacher and a review of the past summer shows that many little luxuries in the way of car equipment have been brought out, many of which tend to make easy the trips

Touring of Past Summer Brings Out

of the pleasure-seekers. To the maker seeking the publicity limelight by means of contests, the Glidden and other big reliability runs have brought out new wrinkles in the way of touring equipment, all of which in turn are handed down to the owner or consumer. The owner, however, has not been asleep himself, and while he has not been actually responsible for the putting of the new goods on the market, still in many cases it has been his ideas that have been taken up by the makers of accessories, who are keen to refine the present list of sundries and car-fittings.

There is considerable difference between the modern touring equipment of today and that of a couple of years back, but there will be almost as much difference between the present and the future as there was between the old and the new, if one can judge by a survey of the 1911 ideas as now seen in the windows of the big supply houses. Time was when the tourist started out with little save the car, windshield, top, gas headlights, and the kit of tools as furnished by the manufacturer of the car he drove, but that was in the pioneer days. Now your tourist is tired of roughing it and demands some of the little luxuries that were denied him in his earlier days. Inventors have been prompt to meet this demand, and on the market at the present time are many good things, all of which tend to make touring far more enjoyable to the present-day owner than it was to the pioneer.

A prominent business man who has just purchased his first car, dropped into a Chicago supply house the other day, and going to the manager, confessed that he was a beginner and stated that he desired to have his car equipped with every necessity and possibly a few luxuries outside of the regulation equipment as furnished by the maker, such as top, windshield, speedometer, glass front and extra casing. He cared nothing for the expense attached to this, but he did want his car so fitted that he would have on it the very latest ideas in accessories.

BARN LANTERN A NECESSITY
TROUBLE-FINDER LEAVES HANDS FREE

"Go the limit," he said, "and let me have everything. How much can I spend for such an outfit?"

The manager of the store did some rapid calculating and figured that for \$300 he could equip that particular car with enough new things to make touring very enjoyable for the new owner. The outfit, as he put it down, included everything from an expensive Thermos bottle lunch outfit around \$75 down to a common barn lantern at \$1.50, which is a necessity.

This incident merely illustrated the modern trend in the accessory line. It was probable that this \$300 added outfit might have a terrifying effect upon intending purchasers of cars, but as this accessory store manager pointed out, it was not necessary for everyone to be a high-roller. At the same time, it illustrated very clearly the versatility, if it may be called such, of the sundries business.

"While it is possible to spend \$300 for such an outfit, an owner can be fitted up very comfortably for \$50," said L. L. Halle, manager of the Standard Automobile Supply Co., of Chicago, in discussing the fashions. "The past season has resulted in the development of many good ideas which now are coming out for the fall trade and for the season of 1911. In outfitting the owners we now have a very wide range, and we can sell articles which never were dreamed of before, but which, now that we have them, will be impossible to get along without. I find that the accessory business divides itself into three classes—the high-priced car, the medium-priced and the low-priced. Each has its necessities and a glance at the catalog shows the range."

"Take it in the case of the high-priced car owner. If he is planning a tour, he could come to me and select a variety of articles. First of all, he should possess himself of that motorist's compass, a good route book, which would cost him \$2.50, a low figure at which to start out such a list, but without this route information he would be lost. He would need



EACH HAS INDIVIDUAL SUIT CASE



ROBE RAIL BAGS ARE USEFUL



GOOD TIRE-LOCK FOILS THIEVES

Fresh Ideas In Motor Accessories

one of these electrically-operated horns, in addition to the regular noise device which comes on his car, and this can be had at prices ranging from \$15 to \$50. Nowadays the average user of the highways pays no attention to the puny noise of the old French horn and one needs the electrically-operated signal, in order to secure the right of way. The windshield comes with the car in most cases, but we have here something that will be appreciated by drivers who are out in stormy weather, a windshield cleaner, which, as its name indicates, cleans the shield of rain or frost and enables the driver to see where he is going. This useful little article lists at from \$2 to \$10. Next we come to the trunks, which are not the regular equipment of the car, and here we have a wide range. There are all sorts and varieties of trunks. There should be one for tires and extra inner tubes, and another for clothing. A third one can be added if desired, one in which hats may be carried. The clothing trunk that is proving highly popular is one which is merely used for the storage of suit cases. This is a really good idea, for it enables each individual in the party to have a suit case and carry it where it will be out of the way and protected from dust. It also enables an individual to get at his own wearing apparel at any time without disturbing the clothing of others. Its cleanliness recommends it. A trunk of this sort sold empty lists at \$30 and fitted with three suit cases at \$48. In most cases these trunks are made over a wood frame and covered with enamel leather-finished duck and lined with Irish linen. As a general rule they are dust and waterproof.

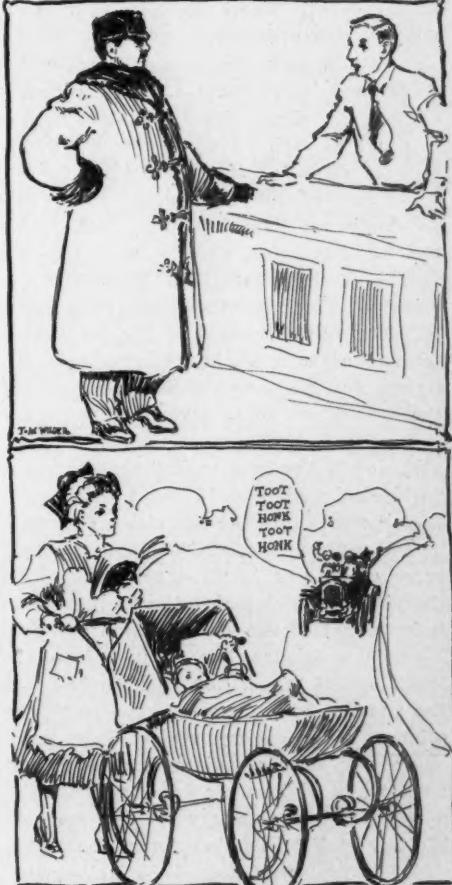
"Also useful is a robe rail bag, which, as its name indicates, is designed to be carried on the rail attached to the backs of the front seat. This bag has several compartments, in which may be carried the goggles, veils and coats, and which are thus protected from dust and also from the danger of being damaged. Such a bag lists from \$25 to \$50.

"Extra tires always should be carried in durable waterproof tire-covers, which should be properly made and which can be had from \$2 to \$4. A tire-cover pays for itself in short time in the protection it gives in the way of preventing the rubber from rotting. Also there should be some sort of a locking device for attaching the extra casing to the running board, for nowadays tires often are stolen when the owner is not around. Of course one can get along with an ordinary chain padlock, but for the sake of appearances we have such devices listing as high as \$10, which are fitted with Yale lock and which defy the thief.

"Nowadays no tourist thinks of going out without a tow rope, either, in his tool box or under the seat, for he never can tell when such a rope will be needed. He may get into a ditch from which he cannot get out under his own power, or he may come across some other motorist whom he wishes to assist. We generally sell these ropes in 40-foot lengths, the price of which is \$2 and up. Another useful thing is the ordinary barn lantern. A good one can be had for \$1.50, and the tourist will find that such a light will come in handy, especially if he has to leave the car and seek information as to route. Another good idea is the spade, which can be used in getting out of ditches and muddy spots in the road. They have them from \$1.50 up and one of the new ideas is a folding spade, the handle being hinged so that the spade can be easily stowed away under the seat. Of course, when the driver gets into trouble at night a light is a necessity, and we have all kinds of trouble-hunters from \$1 up. One of the new ideas is a small electric lamp, which derives its current from a storage battery which is attached to a band which can be placed on the driver's head, so that he may have both hands free while working on his engine. Such a lamp lists at \$2.50. Anti-skid chains are of course a necessity, and have been on the market for a long time. These sell at anywhere from

\$4 to \$15, according to the size of the wheels. In the same department is the mud hook, which comes into play when the going is so bad that chains are of no avail. You need two of these mud-hooks to a wheel and the list is \$1 each. If the owner has no top for his car, he should not venture out on a tour without a rubber storm cover, which is a huge rubber blanket, which is attached to the dash in the front and extends to the back of the tonneau. There are holes in this cover through which the occupants of the car put their heads, and this offers a good protection from the storm. This can be had from \$7 to \$15, according to size.

"Of course every car carries a jack

CLOTHING AN IMPORTANT ITEM
ELECTRICALLY-OPERATED SIGNALS NECESSARY

and a pump, but the owner should see to it that both these useful articles are good ones. At the same time we have something besides the pump for filling tires. One of these is a small tire tube, as it is called, which is filled with gas sufficient to inflate a single tire. The original cost of this is from \$1 to \$1.25, while the recharges cost but 20 cents each. These tubes are so small that half a dozen can be carried in the tool box. Then, too, there is the larger tank, capable of filling from ten to twelve tires, which sell from \$12 to \$15. Then, too, there are air pumps, which are operated by the engine and which list at from \$12 to \$30. One should see to it that his tool box carries a dozen extra valve plungers or cores, as they are technically known, a few extra dust caps for the tire valves, a set of end wrenches, a hammer, and a cotter-pin puller, all of which, as a rule, do not come with the car. There also should be blow-out patches, which often save a long walk. Demountable rims now enjoy an almost universal vogue among owners of high-priced cars, and in touring it will be found advisable to carry two extras, as well as a supply of inner tubes. A new idea that is just coming out this fall is grease put up in tubes, each tube being a grease gun in itself. We sell these in dozen lots at \$4 and with each dozen there goes two spouts and a plunger. By unscrewing the top of the can a spout can be screwed on, while at the other end there is a handle, the turning of which forces the grease out of the spout. The cleanliness of this appeals to every driver.

"Now we come to the equipment of the driver and its passengers. Each occupant of the car should have a duster and a raincoat as well as goggles. The duster sells at anywhere from \$1.50 up to \$12, while one of the most popular rain-protectors is an English slip-on coat, which can be had from \$10 to \$30. Drivers should have puttees for protection in rainy weather, and these sell from \$3 to \$8. There are all kinds of goggles, selling from 50 cents to \$6, besides spectacles designed for protection from the glare of the sun, which go as high as \$10. Amber and smoked glass are often used in goggles, and it has been proved that amber is particularly adapted to night driving, in that it seems to make the vision clearer.

"Of course, one of the enjoyable features of touring is the lunch basket, the carrying of which makes the touring party independent of the average country hotel. Nowadays science has entered into the lunch basket proposition, and we find that the vacuum bottles have proved to be the solution of the eating problem. Each lunch outfit now has its equipment of such bottles, and in addition we find that it is even possible for one to carry his own ice box. We have what is called a rear ice trunk, which is 29 inches long, 13½ inches wide and 15½ inches deep, which lists at \$65, and which can be placed on the trunk rack

Manufacturers'

MAKES COMPARISONS

Detroit, Mich.—Editor Motor Age—While all this talk is being passed along about the great extravagance of the nation in buying motor cars, I find it very interesting to look into the matter of other extravagances and make comparisons. How does the amount of money put into them compare with the amount spent for other luxuries. We need nothing more accurate than government records, which shows there was brought into this country alone from other nations last year, luxuries which amounted to the total sum of \$250,000,000. The total valuation of the cars built in America during the same time, was only \$135,000,000, or a little more than half as much. With still greater interest it is noted that of this amount spent for luxuries from other countries, three articles, each worn purely as decorations, viz: Diamonds, laces and embroideries, cost the buyers of this country at retail at least \$136,000,000. This alone would buy all of the cars built here. And but a very little of this amount was paid back for American labor while

or on the running board. It is arranged with a zinc box and a large piece of ice and has separate boxes for fruit, meat, sandwiches, etc., as well as arrangements for carrying six quart bottles or nine pint bottles. The whole inside arrangement can be removed if desired, so that the trunk can be used for other purposes. We have a lunch basket which can be arranged for from one to six people, and sells from \$7 up, and which contains two Thermos bottles, knives and forks, table cloths, plates and all the other paraphernalia necessary for getting a good, square meal in the country. Another idea in this line is an emergency lunch kit, which is stocked with non-perishable food, and which is kept under the seat, to be used when the emergency demands. This sells for \$7.50. For those who do not desire to go to such an expense, we have a lunch basket, one side of which is equipped for the carrying of ice and the other for food. It is made of wicker with round ends and lists from 75 cents to \$12.

"Then there is the lunch trunk, with an outside measurement of 20 inches and which is 10 inches wide and 10½ inches deep. It straps on the running board and the trunk has space at one end which is always stocked with such eatables as sardines, olives, crackers, cheese, etc. Besides this there is ample space for fresh sandwiches, meats, fruits, etc. The equipment consists of three 1-pint bottles and

plates, knives, forks, spoons, cups, napkins, tablecloth, corkscrew and can opener. This is made in three grades, listing at \$38, \$48 and \$75, respectively."

over half that which is paid for motor cars goes back into salaries and is thus passed on and on.

These figures are only for 1 year, still, this expense has been going on year after year, and no one has said a word about it. The most interesting thing about it is that the motor is not a luxury nor a rich man's plaything. It is so classed in instances, but there are cases where it is a necessity to one where it is not. The family that lives a few miles from town has used horses and carriages for years. It always has owned the best horses it could afford. In instances, farmers have driven teams worth \$1,000 and a carriage worth from \$200 to \$300 more. Now these people drive motor cars and save horseflesh and time. There are hundreds of men in cities who are doing just double the work they were able to accomplish before they owned a motor car. Is it an extravagance for such people to own a car! In almost every office in every large city a few years ago were pale-faced, puny, sickly looking fellows who were called men. They tried all kinds of exercise to make health. Look over the pages of the magazines of those days and notice the many advertisements of patented devices and schools to make men grow healthy. And these schools thrived. What has been the result since the motor car has been brought within the reach of thousands of these people? They are stout, husky chaps with muscles of iron and a brown upon their cheeks which equals their country brothers. Did you ever see such healthy signs before the motor car arrived?—R. A. Palmer, general manager Cartercar Co.

PROUD OF MICHIGAN

Jackson, Mich.—Editor Motor Age—The total capitalization of Michigan's forty-five motor car factories is nearly \$50,000,000 and these factories give employment to about 50,000 men, in addition to some 20,000 employed in the manufacture of parts and accessories. It is difficult to realize the great benefit this industry has already brought and will continue to bring to the state of Michigan. It has become necessary to build new and larger hotels in Detroit and other cities, which even now are inadequate to care for the thousands of visitors, and what helps hotels helps all mercantile establishments of whatever nature. In the matter of workmen's wages it is a well known fact that the ordinary labore need no longer starve on miserably small wages, but if he has any ability at all he can earn much more than formerly, and no one need remain



Communications

unemployed, as the demand for competent workmen already exceeds the supply. Homes of all descriptions are in great demand and residence property, which has long remained vacant, is now finding a ready market. In fact, it has already been predicted that in a few years Detroit's population will have reached the million mark and this city become the greatest commercial center of the middle west.—F. L. Holmes, Jackson Automobile Co.

BEAT THE PRICE-CUTTER

Newark, N. J.—Editor Motor Age—This letter has to do with a matter of such pressing importance to manufacturers of motor car accessories that I doubt if any other general problem today quite takes its place. Briefly, I refer to price-cutting.

As you are well aware, the cut-rate house is fast establishing itself throughout the country, wherever trade is best. Its existence, already a serious menace to the regular dealer, whose business has been built up steadily through fair dealing and regular methods, is likewise certain to prove disastrous in the end to the manufacturer. But there is an ethical as well as a business side to the matter. The manufacturer looks to the regular and legitimate dealer to handle his product and sell it at list prices—to maintain strictly these prices, moreover, to their mutual advantage, and yet—around the corner, perhaps, from the regular dealer—a cut-rate house is offering the same article, and probably advertising it extensively, at a reduced price. What is the regular dealer to do? What can he do except to pit good reputation and good salesmanship against the heavier odds of low prices? But what if the manufacturer—he who asks and expects the dealer to uphold his list prices—what is he doing? As a matter of fact, the solution of the difficulty is altogether up to the manufacturer of accessories.

Ethically, the manufacturer ought to be responsible. His duty to the dealer doesn't cease when goods are sold and shipped. He should see to it that the dealer makes a legitimate profit and is given the same protection that he himself expects from the dealer. Personally, I believe that the dealer is fully within his rights in demanding such protection. But what I want to prove here is: that every manufacturer, provided only that his product is patented, can effectively stop price-cutting, and that, moreover, it is to his own best business interests to stop it.

This company has perfected and had in successful operation for some time a license system, consisting of license labels, tags and billheads, all governing the sale of the Klaxon goods. A complete description of the system and its operation cannot be given here, for lack of space; but I will

gladly send same, together with specimen labels, etc., to any manufacturer who is interested. With simple changes it can be applied to any patented accessory. As to the complete effectiveness of this system I can only say that today, so far as this company is aware, it is impossible to obtain a Klaxon under its list price from any house anywhere. During the summer past we issued injunctions against ten firms in New York, two in Philadelphia and one in Pittsburg. As a result of these injunctions the above dealers are effectively prohibited from dealing in our goods at any price, from cataloging them, or from securing them from any source whatever.

This summary action may, at first thought, strike the manufacturer as bad business. As a matter of fact, we have proven it to be decidedly good business. The comparatively small trade which it lost for us has been made up many times over by increased business of permanent value from firms of real merit and stability. Logically and practically that is the way the matter is bound to work out.

We have on file a large number of letters from the trade in Boston, Philadelphia, New York, etc., all of them prompted by our campaign against price-cutting and all of them testify warmly to their appreciation of our efforts in their behalf. A manufacturer has only to glance over these letters to convince himself of how vital the issue is to the dealer. The matter is pressing, and the solution is possible and practicable. I trust that the manufacturers will appreciate both these statements and unite at once to protect their trade and themselves.—F. Hallet Lovell, Jr., president Lovell-McConnell Mfg. Co.

COULD'NT FIND WHEELBASE

Detroit, Mich.—Editor Motor Age—The following was received at the office of the Regal Motor Car Co. and speaks volumes for the intelligence of the writer, to say nothing of his evident desire not to overlook anything that rightfully belongs to him under the specifications:

"Brownston, Aug. 20, 1910. Regal Motor Car Co., Detroit—The three cars which I bot from your young man when he come to my town have came in at the railroad, and I have went to the bank and paid the draft and took the cars from the railroad and brung them to my place. They look fine and I know I will be able to sell these here three anyhow and maybe some more. I have took the specifications and have checked off everything I can find they calls for excepting the wheelbase whitch I can't find nor locate. I know

you done sent it as you are good people and have leaved out nothin and I ain't complainin but just want you to know this here wheelbase is short. There are some fellers coming to my town to see them cars next week and I want them to be right. I have looked under the back seat, in the tool box and everywhere &c and cant find it. Please send it to me by express so it will be here by the time them fellers what are coming arrive, and oblige, Your friend, O. P. Brown."

This is on a par with the new owner who couldn't find the cylinder that was missing.—Regal Motor Car Co.

PULLMAN TRAVELS FAST

York, Pa.—Editor Motor Age—We are sending the official running time of the eight cars which finished with perfect scores in the Atlanta Journal-New York Herald good roads tour, which was run June 6-13 from Atlanta to New York City. These figures are official, and are given us by Alex. Schwalbach, who was secretary and starter of this run. Since the tour some makers have advertised that they made the fastest running time, but not officially so. Therefore, at the request of the A. A. A. board, Mr. Schwalbach has drawn up an official record of the actual running time of the eight cars with perfect scores. The Pullman leads them all as per the following: No. 49, Pullman, 52:49; No. 13, Pope-Hartford, 53:36½; No. 30, Lozier, 55:05; No. 6, Pope-Toledo, 55:49; No. 53, Cadillac, 56:56; No. 57, Mitchell, 57:47; No. 56, Columbia, 58:41; No. 19, Ford, 59:26.—Pullman Motor Car Co.

PACKARD INCREASES FORCE

Detroit, Mich.—Editor Motor Age—In view of widespread rumors of troublesome times in the trade, the following advertisement, which is appearing daily in both morning and evening Detroit papers, is of special interest:

WANTED—Motor car workers in all departments—machine operators of all kinds, assemblers, body makers, painters and finishers.—Packard Motor Car Co.

This week 528 men were added to the Packard pay-roll, and about 500 more will be employed within another week. In fact, men are being taken on at the rate of a hundred a day. During August the Packard company shipped 451 cars and sixty trucks. This is the biggest month's deliveries in the history of the company. A comparison of the first 3 months of this season with last year is as follows:

	June	July	August	Total
1910	142	335	451	928
1909	25	178	321	524

Within the past few months more than \$110,000 worth of new machinery has been installed and 9½ acres of new floor space occupied. Work on the new 3,000-horsepower engine in the main power plant and on a new power plant for the foundry is being pushed. Within 2 weeks the machinery for the recently completed drop forge plant will be received and another big addition to the pay-roll will be made.

—Packard Motor Car Co.



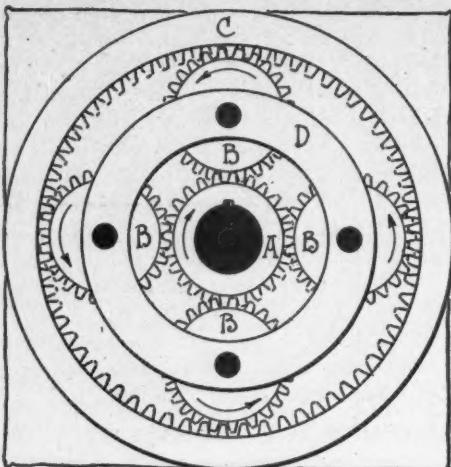


FIG. 1—PLANETARY FOR LOW SPEED

PLANETARY DEFINED

GALLUPVILLE, N. Y.—Editor Motor Age—Will Motor Age kindly answer, through the Readers' Clearing House, the following questions?

1—What wages does a chauffeur generally receive after he has taken a course in either a motor school or a garage, if he thoroughly understands the gasoline car, and what are his duties?

2—Explain by diagram how a planetary transmission works, and also how the gears work in a differential.—Reader.

1—All depends upon the character and ability of the chauffeur and the position he happens to get. Many chauffeurs have been known on leaving a motor school or garage, to secure positions paying from \$80 to \$100 a month, these wages often including board and room. These, however, are exceptions to the general rule. Many chauffeurs after leaving a school will go to work in a garage as a repairman for a salary of from \$9 to \$12 or \$14 a week. Others will immediately secure positions as chauffeurs in private service and receive a salary of from \$50 to \$75 a month. The duties vary with the position. If the car is kept in a garage, all the driver generally has to do is to keep the car properly oiled and adjusted, see that the supply tanks are properly filled, attend to the tires, and keep the car in good working order; the washing and polishing being done by the garage attendants. If the car or cars are kept in a private garage, the chauffeur often is required to do the washing and polishing as well as the driving and general repair and adjustment of the machines. Then there are still other positions where a chauffeur is not only required to care for the motor car but, in order to earn every penny of the \$45 per month usually paid for such services, he must take care of the lawn, wash windows and make himself generally useful. Such positions, though, are, perhaps, no more numerous than the positions in which the chauffeur is almost a member of the family. If he is a gentleman, he is treated accordingly; he has a room in the house, access to the library and sometimes even to the billiard-room; the washing

The Readers'

and polishing and general cleaning of the car is done by a coachman or the like; and his services consist of merely keeping the motor car in A-1 mechanical condition and driving intelligently.

2—in Figs. 1, 2, 3 and 4 the principle and construction of a planetary gearset such as is now in use on light commercial wagons and runabouts, and which gives two forward speeds and reverse, is illustrated. These illustrations are taken from Roger B. Whitman's Book, "Motor Car Principles." In all the diagrams the pinion gear A is keyed to the engineshaft, the internal gear C is an integral portion of a drum which is loosely journaled upon the engineshaft and between the pinion gear A and the internal gear C there are four pinion gears B, in mesh with the gears A and C, that revolve on stubshafts attached to a spider or flange which is loosely journaled upon the engineshaft. The sprocket to which the driving chain of the

EDITOR'S NOTE—In this department Motor Age answers free of charge questions regarding motor problems, and invites the discussion of pertinent subjects. Correspondence is solicited from subscribers and others. All communications must be properly signed, and should the writer not wish his name to appear, he may use any nom de plume desired.

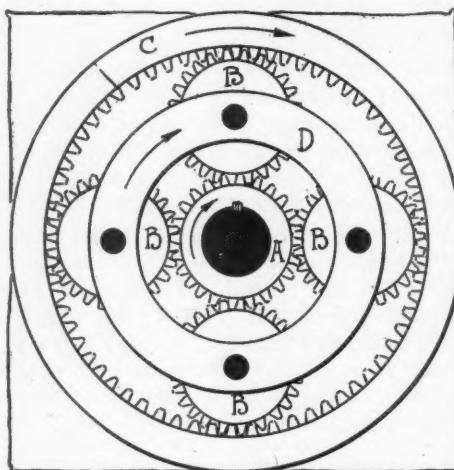


FIG. 2—PLANETARY FOR HIGH SPEED

car is attached is rotably attached to this spider or flange. Fig. 1 shows the direction of rotation of the various gears on low speed. The gear A revolves at motor speed in the direction indicated by the arrow upon it; the gears B being the same size, turn at the same speed in the opposite direction. The drum containing the internal gear C is held stationary; thus the spider or flange D, supporting the gears B, revolves in the same direction as the gear A, but as much slower as the difference between the number of teeth upon one of the gears B and the internal gear C. Second or high speed is indicated in Fig. 2. By means of a clutch device, not shown in this illustration, the drum and gear C and the gear A are locked together, so that the gears B are held stationary between them, that is, they do not revolve on their own axes, but the whole outfit moves as a single compact unit, and the spider D revolves at crankshaft speed. The reverse

mechanism, Fig. 3, comprises an entirely separate set of gears in which the drum carrying the integral gear C is connected to the driving sprocket, instead of the spider D, as in the set described above, and a means is provided whereby the drum supporting the gears B can be held stationary. Therefore, when the drum D is held stationary, and the gears A and B revolve as indicated by the arrows, the internal gear and its drum revolve in an opposite direction to the one on the engineshaft, and reverse speed is obtained. A sectional view of a planetary gearset giving two forward speeds and reverse, is shown in Fig. 4; S being the engineshaft; RP the reverse pinion keyed to the engineshaft; RG the planetary reverse gears; D the drum supporting the reverse planetary gears; RB the clutch band for holding the drum stationary. E is the driving sprocket, which is integral with or rigidly attached to the sleeve V, which is loosely journaled on the engineshaft, and having the internal gear drum for the reverse gear at one end and the spider or flange supporting the planetary pinions of the forward speed gear at the other end. LP is the low speed pinion; LG the low speed planetary pinions; D1 the internal gear drum for low speed; LB the clutch band for holding the drum D1; C, the high speed clutch; and K the key of the high speed clutch.

A conventional bevel gear type of differential mechanism is shown in Fig. 5. It is composed of four bevel pinions, two of which are clearly indicated on the shafts S, and two bevel gears C and C1. The separate shafts A and B respectively are

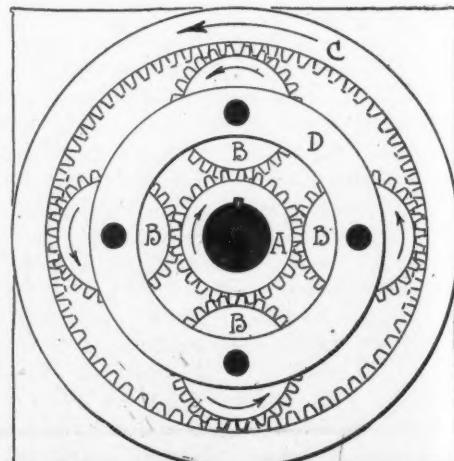


FIG. 3—PLANETARY GEAR FOR REVERSE

Clearing House

EDITOR'S NOTE—To the Readers of the Clearing House columns: Motor Age insists on having bona fide signatures to all communications published in this department. It has been discovered that the proper signature has not been given on many communications, and Motor Age will not publish such communications, and will take steps to hunt down the offenders of this rule if it is violated.

connected to the road wheels at their outer ends, and have the bevel gears C and C₁ securely attached to their inner ends. The gears C and C₁ mesh with the bevel pinions P and P₁ which are loosely mounted on the stub shafts S of the spider D. The driving gear G is rigidly bolted to the spider D which is loosely mounted on the two shafts A and B. A little study of the action of these gears will reveal the fact that as the spider D revolves it carries the pinions P and P₁ around with it, and being in mesh with the gears on the ends of the drivingshafts A and B they, too, must turn. Thus the driving power transmitted to the spider D through the bevel gear G is equally distributed through shafts A and B to the road wheels on their outer ends. The object of the differential in a rear axle is to permit one of the road wheels to turn faster than the other when rounding a curve. This would be impossible if the rear axle were a solid one-piece construction. With the construction illustrated, however, if the car makes a turn, the wheel on the inside of the curve will turn less rapidly than the other, and the same will be the case with the respective shafts A and B. If in rounding a curve shaft A turns faster than B, the speed of B will be inversely proportional to that

DISCARD OLD CELLS

Eau Claire, Wis.—Editor Motor Age—If one has a battery, say of five dry cells, and upon testing it is found that two of the cells test only 5 amperes, the other three testing fairly well, which is the better practice to add two fresh cells to the battery, making it seven cells, or throw out the two that test but 5, and put in two fresh cells? I have heard that putting in new cells with those that are considerably run down is detrimental to the new ones,

very much the same as putting in some partly decayed apples into a pile of good ones; instead of the partly decayed apples adding to the value of the pile by increasing its size, they are really a detriment, tending to decay the good apples.—Subscriber.

The better practice is, as you suggest, to discard the run down cells and replace them with good cells, as the run-down cells are detrimental to the service of the others.

USE FOR OLD SPARK PLUGS

Sauk Center, Minn.—Editor Motor Age—As the owner of a good-running car I one day made up my mind to take a trip of 80 miles and return the same night by gaslight. The trip progressed all right for 35 miles, when all at once the motor began to behave badly, refusing to take ordinary hills on high, which it had been in the habit of doing. Having to stop for a little errand at the home of an old friend I found to my intense displeasure that on cranking it would not start, but would make a spasmodic effort and then subside. The motor had always started on the third

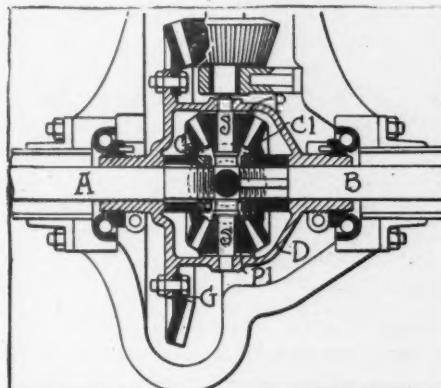


FIG. 5—SECTION OF DIFFERENTIAL SET

up-pull of the starting crank, but now it would not run one moment. I got out my pliers, wrenches and tools to investigate having decided that a short circuit was the trouble. I did my best to discover it, but without results. Finally I came to the conclusion that the timer was the seat of the trouble, and on trying the insulated wire I found one of the four posts on the outside of the timer had in some way lost its mica insulation, and here was the complete trouble. I had tried the buzzers, carburetor, throttle, but had never dreamed that the trouble was with the timer.

Now the trouble was how to fix the insulation. I had an old spark park porcelain with a hole in the middle, but how was I to cut off a washer thin enough to allow a wire to be reseated on the binding post after the washer was on. On a second thought I remembered I had an old mica plug with me, and in a jiffy I had

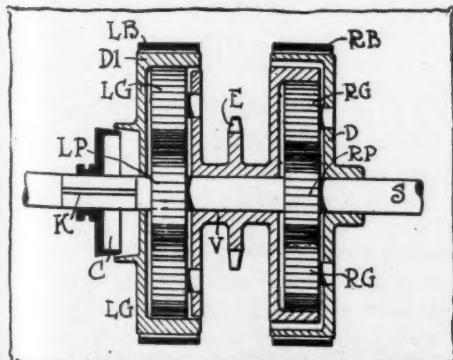


FIG. 4—SECTION OF PLANETARY SET

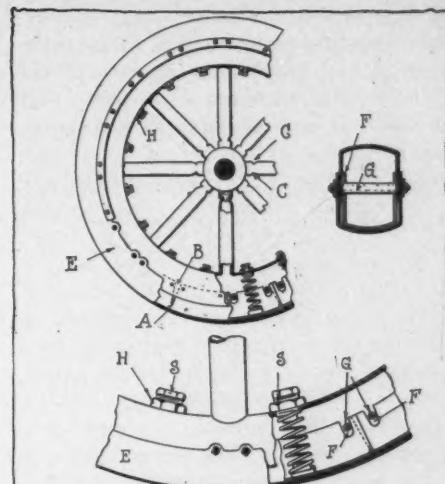


FIG. 6—SECTIONAL STEEL TIRE

the top off and several layers of mica which fortunately just fitted over the brass contact post of the timer. In 5 minutes the job was done and done right for the time being at least, and in fact the insulation is on to this day, and has not given the slightest bit of trouble since.—C. D. Carpenter.

HAS NEW SPRING TIRE

Robert Lee, Tex.—Editor Motor Age—Herewith is an illustration of a spring tire which I have invented and on which I have filed application for letters patent. This tire embraces an entirely new feature in spring tire construction. It has a flexible surface that comes in contact with the road, thus allowing the tire to conform in shape to the uneven surface on which it is rolling, and this conforming to the uneven road surface is the reason for the perfect resilient action of the pneumatic tire. This flexibility is obtained by building the tire with the surface that comes in contact with the road in short sections. These sections are hinged together. There absolutely cannot be built a successful resilient tire using a rigid or unflexible outer surface, no matter how much cushioning there is placed between the outer surface and the hub, because the entire wheel has to rise to pass over any obstruction encountered. This being the case, if you want a rigid outer surface and want this extra cushioning, why not place it between the axle of the vehicle and the body? The result would be the same. In this tire the inner part of the tire—the felloe of the wheel—is of channel section with openings in its inner side through which the springs are placed in position. The outer part is also of channel section and is a little narrower than the inner channel, so it just works freely inside the inner channel. This can be readily understood by referring to the illustration. One of the hinges of the outer part is shown at A, Fig. 6. At B is shown how the sections overlap each other. This wheel can be built having hollow metal spokes with part of the metal cut and bent inward near the hub of the wheel as at C. This forms a

deflector so that any dirt entering the tire, when the tire is being run without the cover E, will fall out through the spokes at the top of the wheel at any time that the wheel is not revolving at such speed that gravity is not overcome by centrifugal force. The tension of the springs may be altered as desired by loosening the lock nut H, Fig. 6, and screwing inward or outward the adjustable inner seat of the spring S. It will be readily seen that a new spring can be quickly replaced by removing the inner seat of the spring, then withdraw the old spring and place a new spring in position by passing same through the opening, then screwing the inner seat in position desired. The power delivered to the inner part of the wheel is transmitted to the outer part by means of slots in the outer part, see F, Fig. 6, in which operates bolts on which is a roller or sleeve, shown at G, and in the sectional view, also at G. By this arrangement all side strain is taken off the springs when power is applied or the brakes set. This tire cannot rattle at the joints because it is under a high spring tension. When running over an obstruction and the tire is bent upward or forced out of the round, every spring in the tire is affected and helps to carry the weight of the machine, because this bending of any part of the tire will contract the balance of the tire—will pull inward on the springs all around the tire—and because of this the springs do not have to be individually strong enough to carry the load. The outer part of the tire is arranged to be covered with a rubber covering, making the tire dust and waterproof.—Charles E. Goss.

CITY SPEED LIMITS

Chicago, Ill.—Editor Motor Age—The improvements in traveling methods have made the world smaller. We go over it in little time, spending days where we once spent weeks. It is nothing to go round the world. An outing means going over a whole city or its suburbs. With a motor car we compass 50 miles where with a buggy we were limited to 10.

Our ideas consequently are bigger, and we want more for our money when going anywhere. We see a whole region where we once saw a small section. We insist on speed, and want the exhilaration of the wind dashing in our face and the blood tingling in our veins. Men are impatient of anything like a snail pace and risk being muleted rather than go slowly. Hurrying is in the air, and an improvement needed is speed tracks for cars as well as for equestrians. Men will not always forego the chief pleasure to be got from motors.

The world moves fast in consequence. It is only a few years since the park commissioners of Chicago adopted a rule excluding motors from the boulevards. Now scarcely anything else is seen on them. The limitations of speed will sometime disappear. That we do not now see how

it will be done is no sign that it will not. We may have special highways, where footmen will be protected by viaducts. Motors as well as railroads may get elevated tracks in places. Men must be allowed to do their utmost with cars. One of the next questions is how they may speed in crowded thoroughfares with safety, as is proposed in opening a way from the South to the North side in Chicago. We cannot always give out whole area to walkers. There must be means to live up-to-date. While we cannot increase our speed till we get ready for it we must devise means of getting ready. How to extend the lawful limit is a desideratum.

The desire for speed shows itself in the rate at which men have improved the motors. In nothing else has there been so many patents in so short a time. Men make more improvements in cars in 1 year than in carriages in 50. We are impatient to get what we want, and so stimulate the inventive faculty. The mind is more active than ever. Inventions are now made chiefly in electricity for motor appliances. On this subject we cannot wait; and brains are taken from other departments for service here. A new world of industry has sprung up and men are learning new trades. Old employments are being left for others; and to be abreast of the times we must take in the changed occupations. We cannot give as much thought to the past as we once did; but our eyes are riveted on the future. What will be concerns us more than what has been. The career of the motor car is one of our chief interests. In this we most clearly see the process of development. Men of talent center an unusual amount of effort here. The motor is an epitome of modern society.

There is little demand for cheapness, but much for speed. This is because the owners of cars are mostly wealthy to whom cheapness is not the main consideration. Were they poor it would be different, as with bicycles. So the improvements give better machines instead of cheaper. There have been many devices for greater efficiency, but few for greater economy. Men only ask which are the best. Prices have not gone down materially. One wants the latest makes, and pays twice as much as formerly.

An opportunity for speed is offered by the outer park belt on which Chicagoans will vote at the next election. The new park area, or forest preserve, is virtually in the country where the city regulations against speed do not apply, or where, if township regulations exist, an exception will be made for the park district. We have urgent need of this outer belt for purposes, not only for securing speed, but for getting a course for motors. We are too familiar with our small area of existing parks. We can go over them all, and take in their entire scenery, in two or

three drives. We have smaller parks than any other large city. They were in the main laid out when we had only a tenth of our present numbers. We should keep improvements abreast of our population. We have scarcely any park system at all compared with Boston, Washington and New York. Boston, which has taken many thousands of acres of its suburbs, Washington, which has added the vast Rock Creek region and New York which has taken in fourteen miles of palisades, have each in splendid territory for motor outings, as have most other large cities. The people of Chicago cannot afford to lag so far in the rear, but should see that the city gets what it sorely needs. It can get the needed land for a small sum now; and it does not require embellishment beyond the construction of a few roads. It is best in its wild state.—Austin Bierbower.

ADJUSTING SCHEBLER

Meeker, Colo.—Editor Motor Age—Will Motor Age advise me how to adjust a model L Schebler carburetor. I attached it to my two-cylinder 24-horsepower delivery car on a cool morning the gasoline would be sucked up into the intake pipe and drip down without being vaporized. I could start the engine pouring gasoline through the spark plug holes, but it would soon stop and gasoline drip from the carburetor. I have tried all kinds of adjustments but to no avail.—J. D. Moog.

If your carburetor can be adjusted so that it will permit the motor to run properly when once you do get it started leave it go at that. Your trouble is not in the carburetor, but more likely in the motor design itself. If the inlet piping is of considerable length, trouble such as yours is quite liable to occur as a result. If the fuel that you are getting is not of the best, similar annoyance would be experienced from this source. Motor Age would advise that before starting the motor on a cool morning drain about half a cupful of gasoline from the float-chamber of the carburetor, then prime the cylinders, start the motor and leave it run at a fairly high rate of speed for a minute or two, after which the throttle may be gradually closed and the motor slowed down. In motors which are not fitted with priming cocks or on which the priming cocks are not readily accessible or opened, a cloth saturated with gasoline and held over the air inlet of the carburetor has been known to facilitate the most obstinate of motors.

CHICAGO-BRADFORD ROUTE

Bradford, Ill.—Editor Motor Age—Will Motor Age through the Readers' Clearing House give me a route from Chicago, Ill., to Bradford, Stark country, Ill., and return?—Claude R. Thompson.

The 1910 edition of the Official Blue Book does not give a route going direct to Bradford, but the most satisfactory route to follow as far as La Salle is as follows: Chicago, Maywood, Hinsdale, Naperville,

Aurora, Montgomery, Oswego, Fox, Millbrook, Newark, Ottawa, and La Salle. From La Salle the route would follow to Spring Valley, Seatonville, Halloway, Putnam, to Henry. This is the closest point to Bradford that the official guides give. A complete route description for this trip is published in volume 4, 1910 edition Automobile Blue Book.

GREASE ON BRAKE DRUM

Hawarden, Ia.—Editor Motor Age—I have a Ford model T, 1910 car. I have trouble with the grease running out of the brake drum and grease getting on the rear tires. It does not get out between the felt washers, but runs out between the bearing cup and the drum cover. Will Motor Age tell me how I can fix it.—M. Olsen.

There are two reasons for your trouble, and you will have to decide which is the correct one.

The first is that you may be using too light a grease in the differential, or filling it too full. The differential should not be filled more than one-third full. Not knowing the grade of grease you use in it it will be of value to state that some cup greases that are on the market melt at low temperatures, and so the lubricant will readily leak through the Hyatt roller bearings on to the differential, and rear wheels and will eventually find its way out on through the brake drums or on to the tire, as you say.

The second possible cause of your trouble may be found in the felt washer at the outer end of the axle housing. It is impossible for the grease to get out between the bearing cup and the drum cover as you mention. If you will look at your car you will note that the axle sleeve extends approximately 1½-inch beyond the brake drum. There is a metal cup which fits over the end of the axle housing as the lid fits on a pail. This cup has a hole in it through which the driveshaft passes. Inside of the cup is the washer, so the lubricant must escape past this washer. One of the reasons of this may be that the key, holding the road wheel to the driveshaft, is shorter than the keyway in the driveshaft and so the lubricant leaks through this keyway.

A solution of the whole problem may be found in mixing Dixon's flake graphite with the grease put in the differential; a 25 per cent graphite mixture will prove satisfactory.

WANTED PRACTICAL CAR

Chicago, Ill.—Editor Motor Age—That breakers are ahead of motor car builders is palpable to readers of financial columns and reports from car-making cities. Always in such cases diagnosticians are plenty, of owl-like visage and Solomon-like tongue. I am one of them. Why have bankers been obliged to renew millions of paper? Why is retrenchment displacing expansion? Because motor car makers have not produced a practical car. They call the motor car a pleasure car. It is not

a pleasure car, even to the man who employs a \$100 a month driver. If any one undertakes to contradict this statement, I shall promptly become peevish, for out of the bitterness of the heart the typewriter writeth.

Motor car makers have followed a natural policy, only open to criticism from its brevity of view. They builded their arks and the floods came and floated them. They were in that happy state where they parceled out their output among impudent buyers. The pinching shoe was on the other man's foot. No one can blame them, from a superficial viewpoint, for standing pat and supplying the demand. It is so natural not to look beyond the end of one's nose. But now they have builded so many arks that they are floating around and bumping into one another. This is no trade secret. When the makers of medium-priced cars and the makers of high-priced cars with one accord begin curtailment of output, it is time to sit down and think.

Never has an industry in the world's history sprung into such magnitude. A mushroom is not to be mentioned in the same breath. But the trade for which the motor has been made is now pretty well supplied. This is the ominous fact that looms threateningly, and has induced the order to reef sails. The towns and cities are filled with motor cars. But motor car makers have not yet touched their great market. They have operated around the rim, but they will get no farther until they build a practical car. Farming America affords a market that builders seem not yet to have dreamed of. If they have, their dreams have been sadly disordered visions. The city man in good measure buys a car for pleasure and then puts in a lot of time guessing where the fun comes in. The farmer needs the motor car in his business.

The practical car that will sell to the farmer in numbers, that will compel expansion of manufacturing facilities, demands imperatively the elimination of the radiator and the pneumatic tire. Makers may gnash their teeth on that proposition as much as they like; it will be all the worse for their teeth, and their bank accounts. I am a farmer. I live within easy reach of the village garage. If I did not, my name would have been Dennis—Dennis Mudd—many a time. What kind of a practical car for the farmer is the one with a water-cooled motor and pneumatic tire, with a garage 2 to 10 miles away? Some makers have heard the patterings of this coming shower which will swell to a flood and are trying to build a different ark. A few of them are hitting close to the mark. But the great concerns are fairly fatuous in their indifference to the situation, and in their insistence that the public, already cloyed in its eager appetite to spend money for machines, that constantly require the spending of more money, and entail inevitable nuisance in

their operation, shall continue to buy the same kind. Give us a practical car—not one that requires both a professional driver and a mechanician.—A Farmer.

WANTS A NEW MOTOR

San Antonio, Texas—Editor Motor Age—I have a Midland roadster, model E, 1909. I recently had an accident, and think it would possibly be better to install a new engine instead of trying to repair the old one; but as the Midland Motor Co. does not build this engine any more, I would like to know where I can buy an engine that I could install in my present frame. The engine is a four-cylinder, 4½ by 5, and I would prefer to get a more powerful engine if I bought a new one.—W. E. Milligan.

Perhaps some of the readers may be able to give information on the subject. Motor Age would advise that the manufacturer be consulted. The factory, through its dealers, should be able to very readily get a line on a motor of the type desired, or, better still, furnish information relative to the installation of a new motor giving more power and of more up-to-date construction. If the factory does not respond promptly there are a number of motor manufacturers in the country who would be pleased to give you specifications of their motors, and you should be able to get what you want in this way.

STICKNEY DROVE

Moline, Ill.—Editor Motor Age—Velie car No. 51 was driven by Stickney in third place and Velie car No. 52 by Cooney in fifth place, instead of third, in the free-for-all in the Algonquin hill-climb, as reported in Motor Age.—J. H. Stickney.

VALUE OF FIXED SPARK

Jacksonville, Fla.—Editor Motor Age—Will Motor Age inform me through the Readers' Clearing House why other manufacturers of motor cars do not use the high-tension Bosch magneto with set spark like that used on the Hupmobile. Is this system of set spark not practical on any motor car regardless of bore and stroke? This set spark system certainly does away with a great many electrical annoyances and has proven very successful.—H. M. H.

There are several makes of cars using fixed spark at the present time, among which are Alco taxicabs, Croxton-Keeton, Franklin model G, Warren-Detroit, Paige-Detroit, Krit and Herreshoff. The fixed spark was originally introduced in order to avoid trouble and injury to the motor by the careless driver. Several motor manufacturers, who have made a careful study of the high-speed gasoline motor, have discovered the injury to such motors of careless spark control, and it was with the object of taking this entirely out of the hands of the driver that fixed spark was first introduced on taxicabs, and it is for this reason that many makers are now using it on their pleasure cars. Fixed ignition, however, is not as efficient as hand-controlled when skillfully operated.

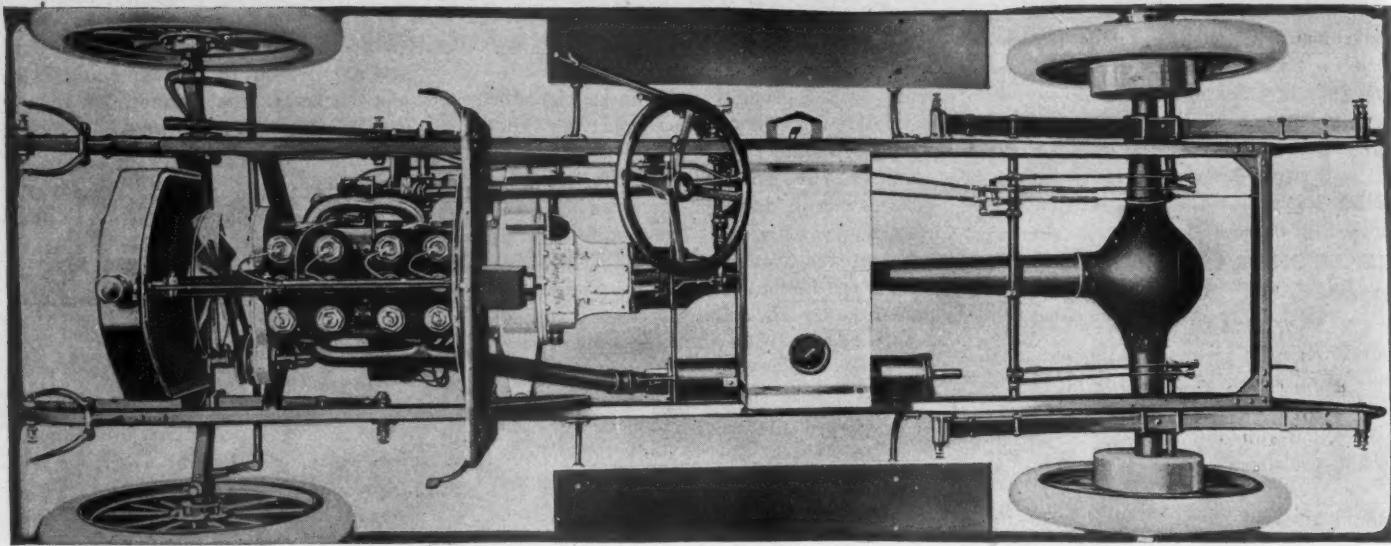


FIG. 1—TOP VIEW OF OHIO 1911 CHASSIS USED FOR FOUR MODELS SHOWING PRESSED STEEL REAR AXLE AND TORSION TUBE

IN MAKING its announcement for its second season before the buying public, the Ohio Motor Car Co., Cincinnati, O., includes four models for the coming season, all of which are mounted on the same chassis, with the exception of the roadster, in which a smaller-sized motor is employed. Two of these are illustrated in Figs. 5 and 6, the former being the three-passenger roadster with top, and the latter the new torpedo design for five-passenger use. A motor with $4\frac{1}{2}$ by $4\frac{3}{4}$ -inch cylinders is used on the touring car, torpedo, and close-coupled tonneau, and one with $4\frac{1}{4}$ by $4\frac{3}{4}$ -inch cylinders on the roadster.

The Ohio car employs a unit power plant carried on three-point support, the three points being designated A1, A2 and A3,

Four Models on One Chassis, Ohio's

Fig. 3. The unit power plant is a carefully thought out construction, and as Fig. 2 shows, is made up of five castings as follows: No. 1 forms the main part of the crankcase carrying the crankshaft and camshaft bearings and having the rearward extension enclosing the upper half of the flywheel; No. 2 is a middle section between which and No. 1 the crankshaft bearings are carried; No. 3 is an oil reservoir used in the circulating system; No. 4 is a tubular casting forming the gearbox; and No. 5 is a conical-shaped casting bolted to the rear end of the gear-box and forming a support for the forward

ends of the torsion tube T, Fig. 3. In Fig. 4 the general layout of the unit power plant appears in section. The details of the gearset and clutch are brought out in detail. The clutch is a multiple-disk one having three steel disks supported on a carrier E, and alternating with these are two bronze disks supported at their peripheries on the flywheel F. This clutch is enclosed in a compartment of its own, where it is provided with a lubricant specially suited for the steel and bronze disks. The steel carrier E is supported on an F & S annular ball bearing B5, so that its weight is taken on the short extension

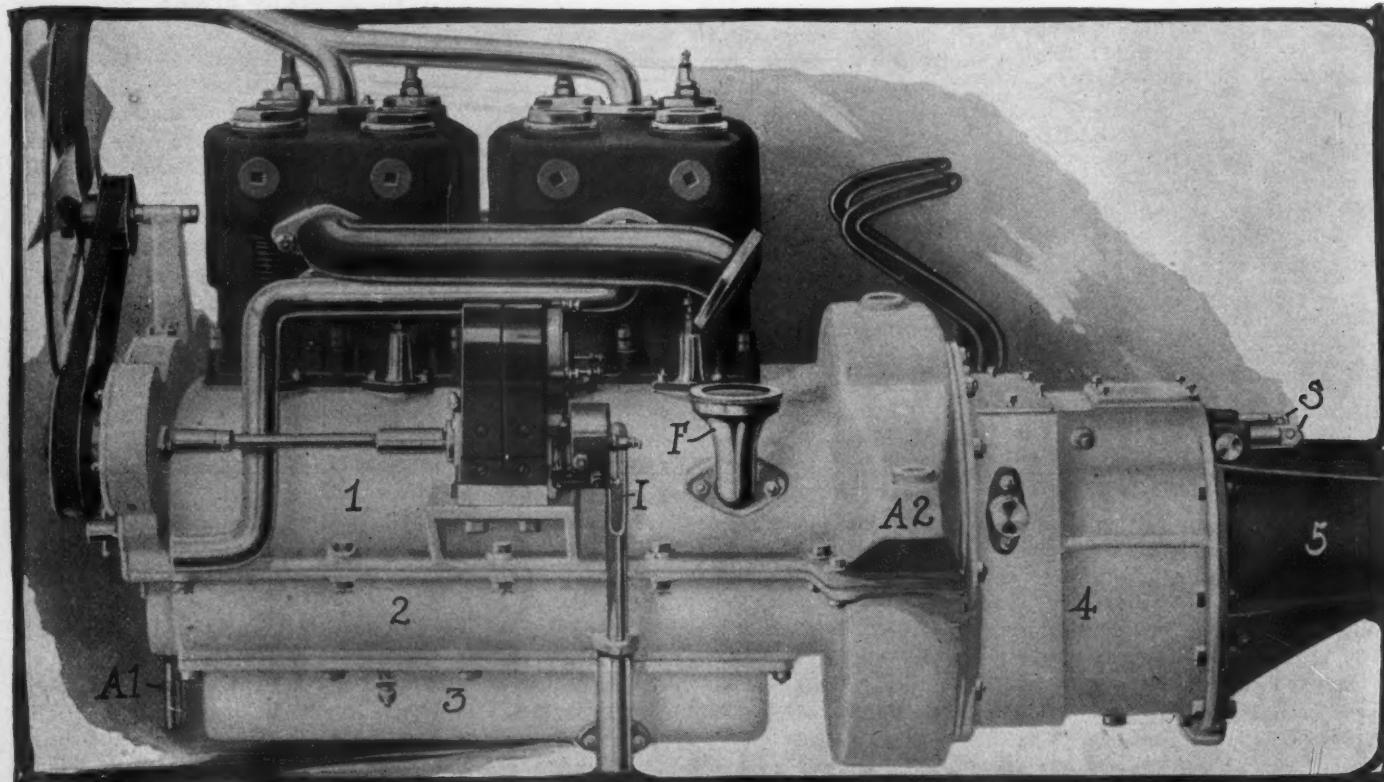


FIG. 2—LEFT SIDE OF MOTOR AND GEARBOX ON OHIO 1911 MOTOR SHOWING THE FIVE CASTINGS REQUIRED TO MAKE UP THE SYSTEM

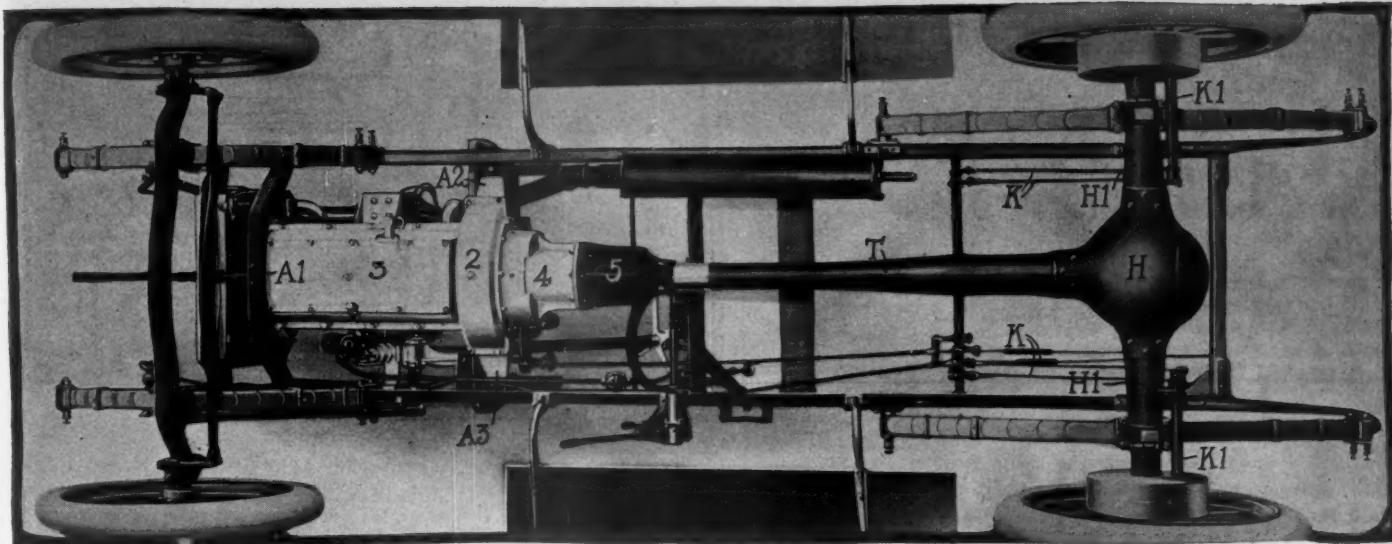


FIG. 3—UNDER VIEW OF OHIO CHASSIS SHOWING THREE-POINT SUSPENSION AT POINTS A1, A2 AND A3

Offering for the Coming Season

of the crankshaft. This carrier is keyed to the clutch shaft CS, and which carries on its rear end the pinion in the gearbox. The engagement of the clutch is through a coil spring entirely located within the cup piece L. When disengaging, this spring is compressed through the usual pedal control; and in engagement its tension is transmitted to the disk through a bellcrank G, one arm of which bears directly upon the outer steel disk, and the other end connects through a linkage L1 to the cup L. Adjustment of the clutch is through four adjusting nuts G1, spaced regularly at 90 degrees around the clutch

circle and only two of which are shown in the illustration. These adjusting nuts are provided with a locknut to retain any desired setting. In order that there may be no exchange of lubricant between the clutchcase and the gearbox, a security plate C1 is held in place by studs around the main bearing B4 and a packing is positioned between this plate and the partition P forming the front end of the gearbox. This packing is necessary, owing to the fact that the lubricant suited for the clutch is not the same as that used in the gearbox.

Passing on to a consideration of the

gearbox, it will serve as an introduction to state that it is of the selective type, affording three forward variations. The main shaft MS, as well as the secondary shaft, SS, is carried on F. & S. annular ball bearings, designated B1, B2, B3 and B4. These shafts are both 3½ per cent nickel steel which alloy steel is also used for all gears in the set and also for the propellershaft. This gearset follows the vertical-design type in that the main and secondary shafts are in the same vertical plane. It frequently happens that where these shafts are in this relation oil or lubricant leaks past the bearings of the secondary shaft. The Ohio company has protected itself against this in that the bearings B1 and B2 are housed in depre-

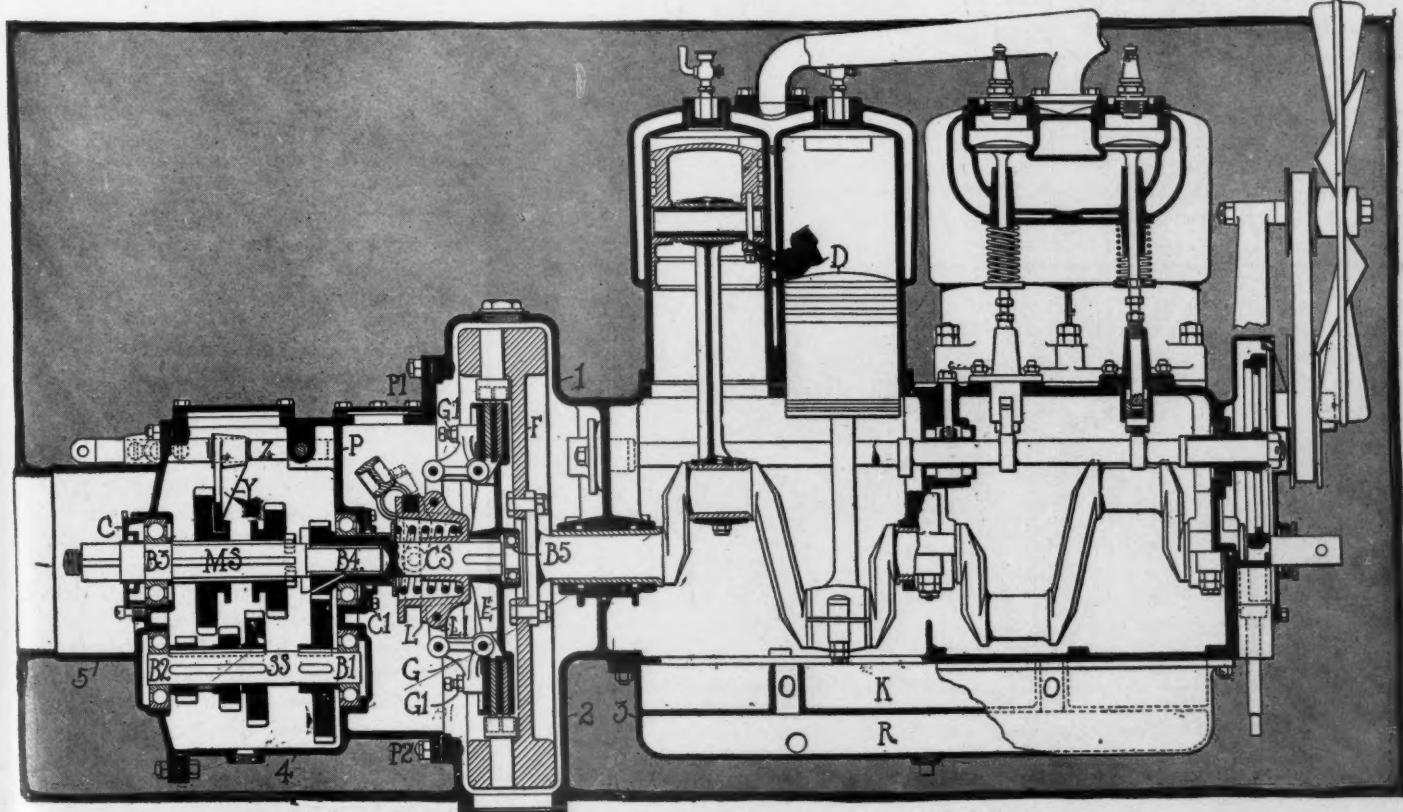


FIG. 4—VERTICAL SECTION OF OHIO MOTOR, CLUTCH AND GEARBOX SHOWING HOW BALL BEARINGS IN GEARSET ARE MOUNTED TO AVOID OIL LEAKS

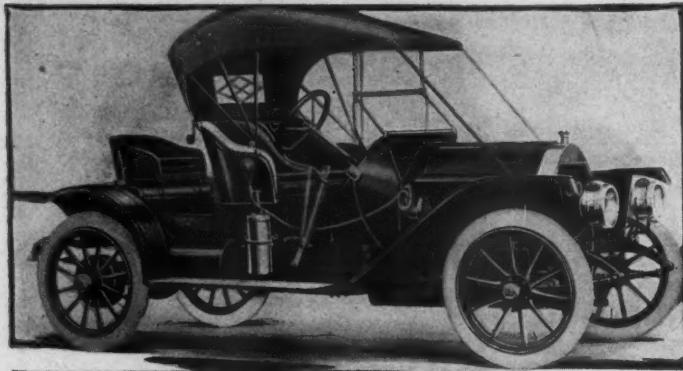


FIG. 5—OHIO ROADSTER FOR 1911 WITH TOP

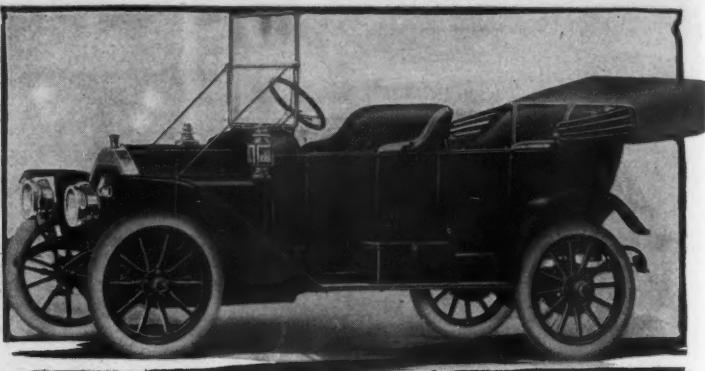


FIG. 6—OHIO TORPEDO MODEL FOR 1911

sions in the ends of the case, one being in the partition or forward end P and the other in the casting 5, which forms the rear end of the case. Owing to this design, leaking at these bearings is impossible, because there is no place where the oil can leak. An equal precaution against leaking is shown in fitting the casting 5 to the casting 4, there being a step joint shown at the lower left. In case of the mainshaft MS the chance of leaking is not so great, but precautions have been taken, and for the rear bearing B3 there is a threaded cap C holding the bearing in place and this cap carrying packing to retain the lubricant. A still further precaution in connection with lubricating the forward end of the mainshaft, where it has a bearing in the hollowed end of the clutch shaft, is a diagonal groove, by which the bushing is lubricated. The shifter rod mechanism for moving the two sliding gears on the mainshaft MS is enclosed and consists of the two shifter rods Z, with yokes Y communicating with the gears, only one of the yokes being illustrated.

The Ohio motor is a conventional four-cylinder design, with cylinders cast in pairs and fitted with opposite valves, these valves being specially large with port opening 1 15-16-inch diameter and valve seats 2 3-16-inch size. These valves are

made of nickel steel and vanadium steel is used in the valve springs. The piston heads are slightly arched. Aluminum is the metal employed in all of the crankcase castings and which number three. The crankshaft is supported on three Parsons white brass bearings, with a total bearing length of 9 1/8 inches divided as follows: Flywheel end 4 1/2 inches; center 2 1/2; front 2 1/8 inches. This bearing surface in conjunction with the 1 1/4-inch shaft diameter furnishes a liberal allowance. The forged connecting rods have 2 1/2-inch bearings. Wristpins are hollow and the upper end of the connecting rod carries a phosphor bronze bushing.

The water jacketing system of the motor is ample, there being liberal water spaces around the exhaust valves and cylinder heads where the greatest heat is transmitted from the explosion. The cooling arrangements include a cellular type of radiator, centrifugal water pump, and belt-driven aluminum fan.

The oiling system employed includes the reservoir R at the base of the case with the regular compartments K, into which the connecting rods dip. Two overflow pipes O maintain a fixed splash level. The usual precautions for the preventing of oil leaking from the crankcase into the clutch case are used and include a packing at that point. A packing is also inserted

between the forward plate of the timing gear housing to prevent oil leaking at this point. The ignition system is a dual one with current supplied by a Splitdorf low-tension magneto and with a reserve starting current taken from dry cells. The Splitdorf master vibrator coil is used.

In the running gear design the Ohio has some unique features, all of which appear in the chassis illustration. It will be noted that the rear axle is of pressed steel housing with a central, or differential, part H, into which are riveted the axle sleeves H1 as well as the torsion tube T. The axle is the Smith design of the floating type and has the differential as well as the driving wheels on F. & S. bearings. The front wheels are carried on this type of bearing also. In the frame construction extreme simplicity is used, the side members being channel section straight from end to end. These are supported on a complete set of semi-elliptic springs, 40 inches long in front, and 54 in rear, with leaves 2 1/4 inches wide. The chassis illustration also shows the fitting of grease cups to all spring bolts, these bolts being hardened and ground. The spring clips are of Norway iron and the brake rods of Bessemer steel. The forward axle, instead of being an I-beam type is of pressed steel construction built of two channel sections, similar to the channel sections of the frame, but with less vertical depth. One channel section is of slightly less vertical depth than the other, permitting its lips to slip inside those of the other half, thereby forming an axle with rectangular cross section. These halves are suitably secured together. This axle of Smith design has been used for two seasons. All models are made with a wheelbase measuring 115 inches, and 34 by 4-inch tires are used, the wheels being fitted with a quick-detachable type of rim. A screw-and-nut steering is used, the column for which carries an 18-inch steering wheel. Before dismissing the running gear, a glance at the brakes shows that both sets are located within drums on the rear wheels. Both sets are internal expansion, placed side by side and operated through a set of rods K, Fig. 3, carried inside of the frame members, the operating arms K1 being carried in rear of the axle where they are more accessible.

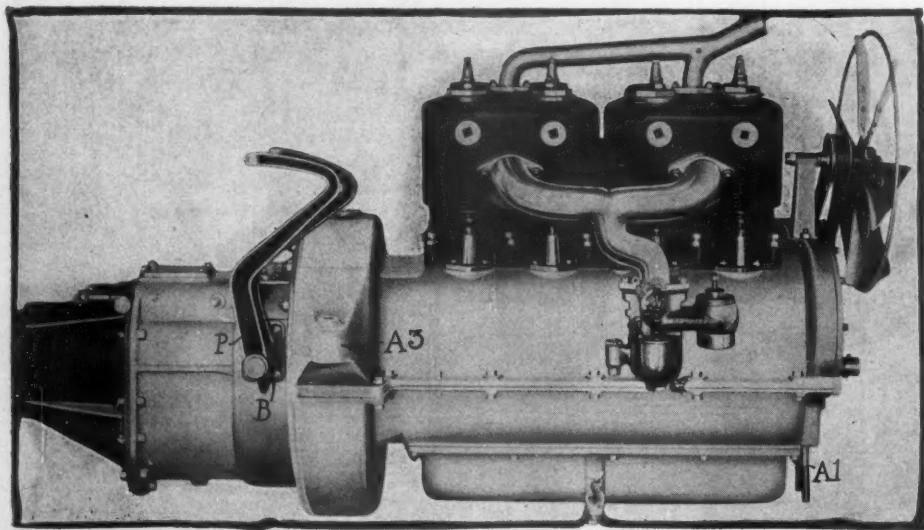
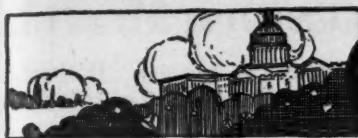


FIG. 7—THE CLUTCH AND BRAKE PEDALS P ARE CARRIED ON A BRACKET B ON THE GEARBOX IN THE 1911 OHIO CAR



Current Motor Car Patents

ALL-BEARING Screw-Jack—No. 969,215, dated September 6; to Calvin T. Starbuck, Birmingham, Ala.—The screw-jack to which this patent relates is interesting in that the greatest objection to the screw type of jack is overcome by mounting the screw on ball bearing. A sectional drawing of this device is illustrated in Fig. 1; it comprises: an integral base B and casing C; a nut N mounted in the upper end of the casing, a screw W threaded into the nut N, a sleeve slidably surrounding the casing, a bearing-head on the upper end of the sleeve and means for operating the screw W to elevate the bearing head. The screw W is mounted on ball-bearings to reduce the friction between the screw threads and the nut N, and in operation the balls are rolled around and upward till they reach the top of the nut, then they pass into a descending groove which winds down around the outer periphery of the nut and are again brought into contact with the screw threads at the lower end of the nut. In lowering the jack the balls move in a reverse direction. A shaft T and bevel gears G serve to operate the screw W, and suitable means are provided for regulating and operating the shaft T.

Anti-Skid Tire Chains—No. 969,425, dated September 6; to Philip C. Traver, Far Rockaway, N. Y.—This patent relates to an anti-skidding device of the character shown in Fig. 4. It comprises a tread plate P, flexible chain connections C connected to the opposite ends thereof, the end of E of one of the connections being permanently attached to links L at the end of two coiled metallic springs which surround the spoke S of the vehicle wheel, and a coupling link K at the end of the opposite connection C which permanently is attached to one spring and formed with a hook for engagement with the link on the end of the other spring. A coupling hook H is interposed between the adjacent ends of the link K and the end link of the connection C. Rubber tubes T incase

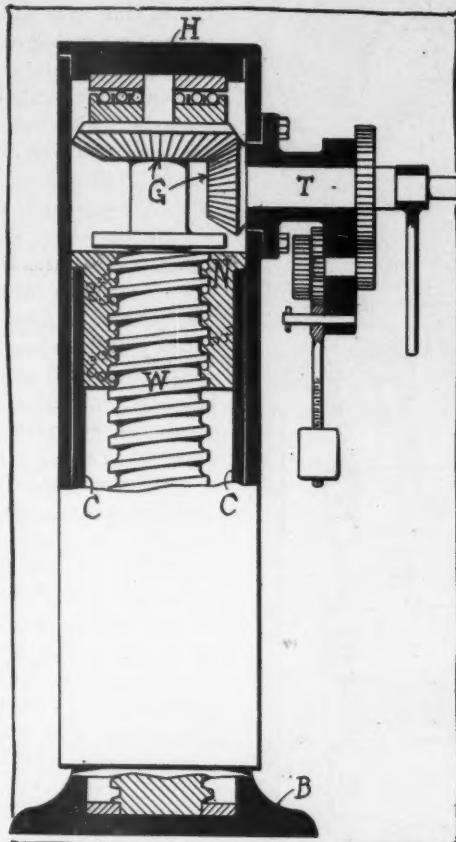


FIG. 1—BALL-BEARING JACK

the springs which surround the spokes to protect the paint thereon. The advantage of this type of anti-skid tire chains lies in the ease with which they may be applied, it being but necessary to bring the two spring connections around a spoke and secure them by hooking the link K through the eyes L1 at the end of the springs, then draw the coupling hook H upward till it locks itself into place.

Detachable Tire Tread—No. 969,722, dated September 6; to Harry M. Pitman, Oakland, Cal.—This patent covers a detachable type of tire tread such as is shown in Fig. 2. It is made of a resilient mate-

rial, and shaped to conform to the tread portion of a motor car tire. In the past many motorists have been known to use old casings in the same way in which this tread is intended to be used, and have received such good service therefrom that a specially-adapted tread of this type should become popular. This tread is concentrically grooved both externally and internally for the purpose of adding to its resiliency and adaptability to the shape of any tire, and to its anti-skidding properties. To apply or remove it one has but to deflate the tire.

Differential Cut-Out—No. 970,328, dated September 13; to William O. Hancock, Orleans, Ind.—This patent covers a means of cutting out the differential mechanism of a motor car driving axle so that in case traction is lost by one wheel, which may have sunken into a mudhole or gotten onto the wet grass, etc., the other wheel may still be called upon to assume the load and move the car. The means is illustrated in Fig. 3, and consists of a differential train of gears including a driving gear G, a driven gear G1 freely rotatable on the rear axle shaft T, pinions P carried by this driven gear, a mate G2 to the driven gear G1 which is keyed to the shaft S of the rear axle, a bevel gear keyed to the shaft T, and a bevel gear on the inside of gear G2 in mesh with the differential pinions P of the other gear. Thus, when the driving gear G is in the position shown, both wheels will move equally fast as long as the vehicle goes straight and the traction of both wheels is the same, the power being equalized between both wheels; should the traction of one of the wheels fail, however, means are provided whereby the driving gear G may be moved on the shaft F so that it will mesh with both the gears G1 and G2 and the axle will then move as if the shafts S and T were one piece. The means for sliding the driving gear G are directly under the control of the driver and the necessary connections are shown.

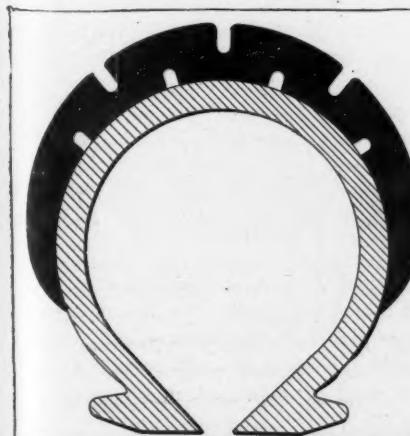


FIG. 2—DETACHABLE TIRE TREAD

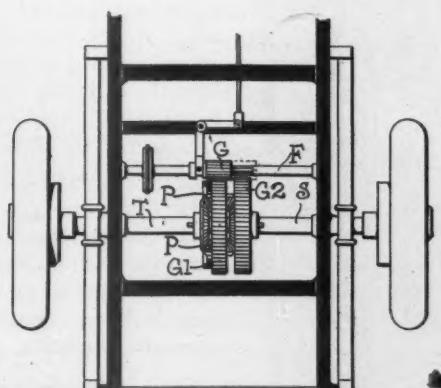


FIG. 3—DIFFERENTIAL CUT-OUT

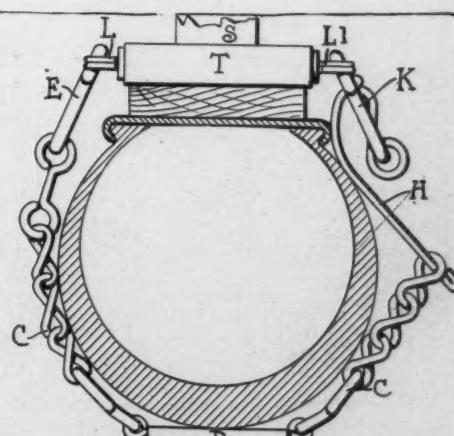


FIG. 4—TRAVER TIRE CHAIN

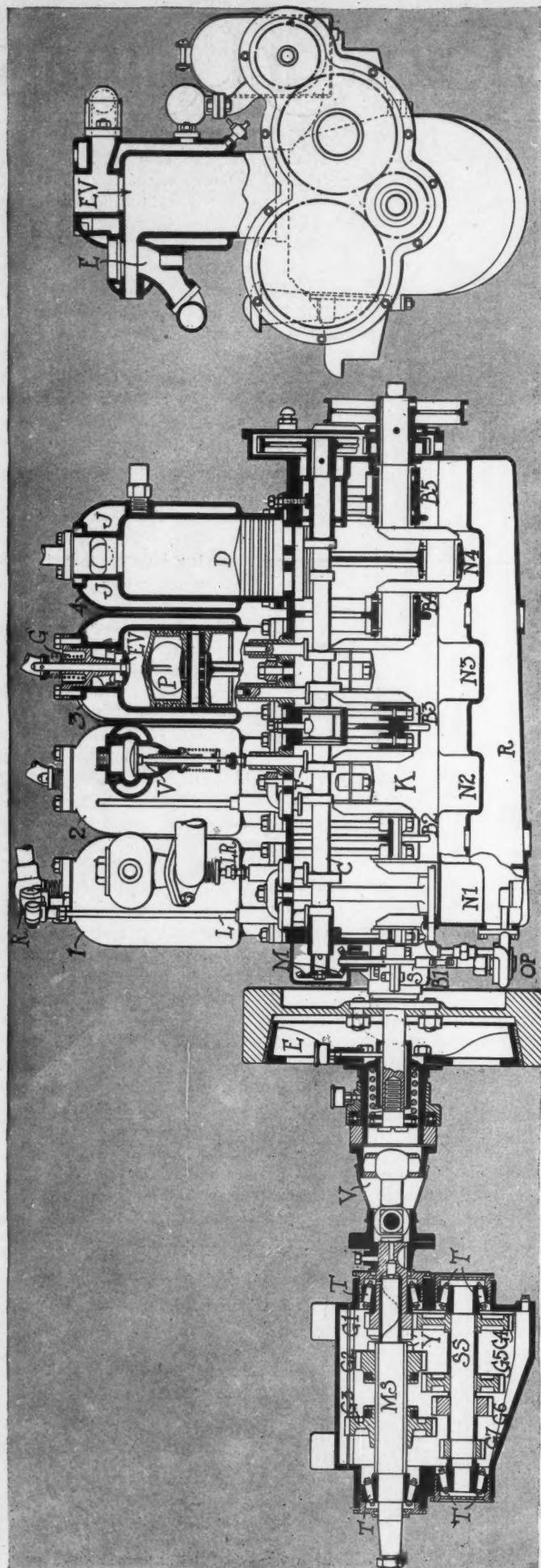


FIG. 1—VERTICAL SECTION OF GREAT WESTERN GEARBOX, CLUTCH AND MOTOR FOR 1911 MARKET

Four Great Western Models

INSTEAD of manufacturing one model, as it is doing this season, the Great Western Automobile Co., Peru, Ind., is listing four body styles for next year, all of which are located on a chassis with 114-inch wheelbase, this being 2 inches longer than that furnished the present season. The four models listed are: Five-passenger touring car, a torpedo with heavily-hooded dash, a semi-torpedo with straight dash, and fore-doors, and a combination toy tonneau with roadster in which the tonneau may be removed and a single rumble seat attached. On the torpedo all door fastenings are inside and the change-speed lever and emergency lever are also inside. This model is built for four passengers. The semi-torpedo is a four-passenger car with fore-doors, but having the control on the outside at the right.

Fig. 1 illustrates the motor, clutch, and transmission fitted on the chassis which is common to all models. Although the three elements mentioned are illustrated together they do not constitute a unit power plant, the motor being a separate quantity from the gearbox, and both carried on subframe members. The motor is a characteristic one, practically the same as used this year, excepting in that a centrifugal water pump takes the place of a vane type used at present. The bore is $4\frac{1}{4}$ inches and the stroke 5 inches. This motor follows that type now becoming rare, in which the four cylinders are separate castings, which allows of using a crankshaft with five bearings, which are designated starting from rear to front, B1, B2, B3, B4 and B5. These five bearings have a total length of $14\frac{1}{2}$ inches. This motor is novel in one other respect, namely, the cylinder type. Generally speaking, the cylinders are of L design, but differ from the conventional type in that the exhaust valve is located at EV in the cylinder head, and the intake valve at E in a separate chamber on the right. This valve location makes it mandatory to use overhead rockers R, shown on cylinder 1, for opening the exhaust valves, which rocker arms are operated through the tappet rods L, these rods being actuated from the camshaft C. This cylinder illustration also shows the direct lifter rods LR for operating the intake valves. The intake valve V, cylinder 2, is well waterjacketed and is removable through the tapped opening at the top of the cage. The lifter rods for these intakes as well as the tappet rods for the exhaust do not carry rollers on their lower ends, but have mushroom, or valve-shaped feet, which bear directly upon the cams. The exhaust valve EV, cylinder 3, is carried in a cage G held in the cylinder by two studs. The valve spring is located externally where it is protected from the exhaust heat and so the danger of eliminating the spring tension is warded off. Cylinder 3 shows the unique type of piston P, which has a heavily arched top instead of a flat top so generally used in car construction. The extent of this arch or dome is also shown at D, cylinder 4. The object of this arching is to increase the compression as well as to guard against the collecting of lubricant on the piston head. The piston is machined and because of the domed head is heavily ribbed inside to give the necessary strength.

In the construction of the crankcase one feature not to be overlooked is included, and consists in the method of supporting the five crankshaft bearings. Looking, for example, at the central bearing B3, it will be seen that the bolts holding the bearing cap in place extend upward to the top of the crankcase where they are used to hold the cylinders to the case, thus these bolts form a direct bond between the cylinder and the lower bearing cap, thereby taking the explosion strain off the upper half of the aluminum crankcase. This method of bearing support applies to all five of the crankshaft bearings.

The lubrication system employed is a circulating one, the oil pump OP of the vane type taking oil direct from the reservoir R, and delivering it through the pipe into the crankcase K. The oil pump is driven through a vertical shaft S which is rotated from the camshaft through a pair of bevel gears M, which are enclosed as

Marketed For Next Year

illustrated. Once in the crankcase the oil forms a splash level in the four compartments N1, N2, N3 and N4, into which the connecting rods dip. When the oil fills these compartments it overflows into a reservoir R through two openings, one between compartments N1 and N2, and the other between N3 and N4. A novel filling cap is used for pouring it into the crankcase, and is shown in the end section of the motor, Fig. 1. This is designed to serve as a compression relief for the crankcase and at the same time to prevent oil being forced out when the motor is running. Oil can be poured into this vast pipe, but by the use of layers of aluminum there is no possibility of it being blown out. All internal parts of the motor, including the five crankshaft bearings, the eight connecting rod bearings, and the piston, are oiled by splash. Oil grooves are cut in the piston so that the lubricant is distributed over the cylinder walls.

In waterjacketing the four cylinders the ample water space J, cylinder 4, cannot be overlooked. The most water space is around the exhaust valve, and by examining the end section of the motor it will be seen that this valve is entirely surrounded. This end section also shows the complete water space around the intake valve. The water pump is located on the left side and is driven by the same shaft which drives the magneto. The use of a fan carried on No. 4 cylinder and belt-driven from the crankshaft is included. In supporting the radiator an effort is made to prevent possible water leakage by not having the water spaces come in contact with the frame, the object being to avoid transmitting frame twists to the water part of the radiator.

The ignition system incorporates a Remy magneto on the left side. This magneto is of the low-tension type and includes with it a step-up coil carried on the dash. A Schebler carburetor is fitted.

Again referring to Fig. 1, the transmission system is illustrated. The first agent is the cone clutch E faced with raybestos and having beneath this facing a series of springs to ease engagement. The spring operating the clutch is entirely enclosed and expands its force between a ball-thrust bearing at the rear and the cone spider at the forward end. A ball-thrust bearing is also furnished for the yoke used for clutch control. Back of the clutch comes a universal joint V of the double-cross design and protected in a leather boot.

The gearset is a vertical-design, selective one affording three forward variations and having the mainshaft MS and the secondary shaft SS carried on Timken roller bearings T. The master pinion G1 transmits direct to the mainshaft MS by means of face clutches Y, which engage when the sliding gear G2 is moved toward the motor. This gives direct drive. For intermediate speed gears G2 and G5 are meshed, the drive then being from the motor through gear G1 to G4 and thence through gears G5 and G2 to the mainshaft MS. For low speed gears G3 and G6 are meshed. For reverse an idler gear is introduced between gears G3 and G7. The possibility of lubricant leaking through the bearings of the gearset is avoided by the use of threaded plates fitting over the ends of the bearing and shown in the illustration.

Shaft transmission to the rear axle is shown in Fig. 4, in which the rear axle with torsion tube enclosing the propellershaft appears. This axle is a semi-floating construction and the torsion tube at its forward end has a yoke support on a cross-member of the frame, as may be seen by the illustration.

The running gear incorporates a double set of brakes, internal and external, applying on drums 12 inches in diameter and 2 inches wide. The frame of pressed steel construction has the side members dropped 2½ inches in the rear to permit of using 44-inch three-quarter elliptic springs. Thirty-eight-inch semi-elliptics are furnished in front. The front axle is an I-beam type with grease cups fitted at all steering parts. The steering mechanism has a worm-and-sector gear and with an 18-inch wheel on the column. Control is conventional throughout.

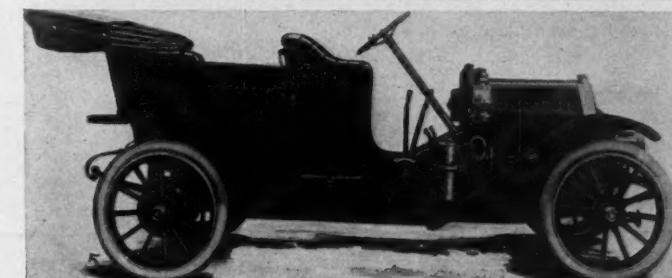
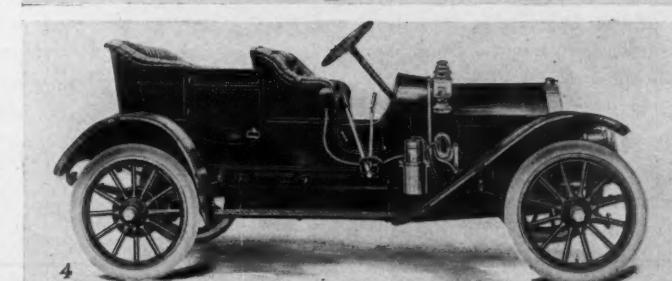
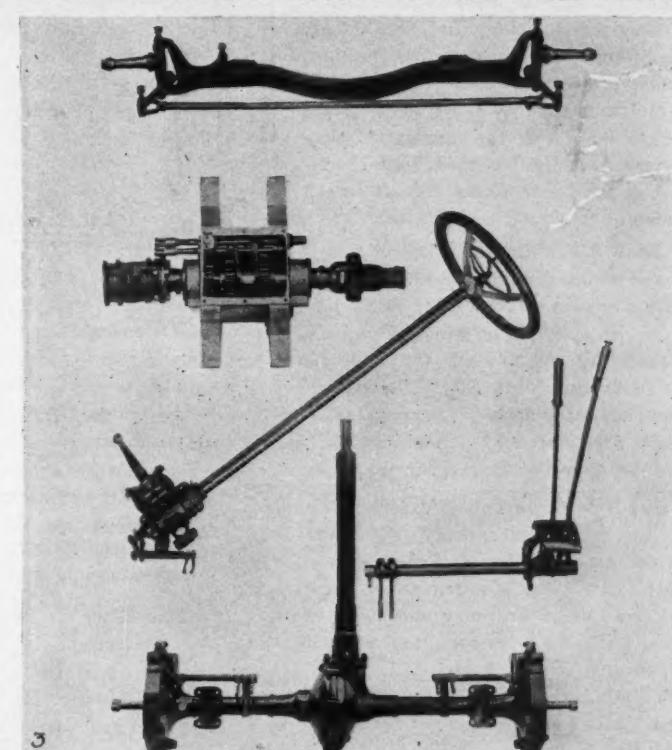
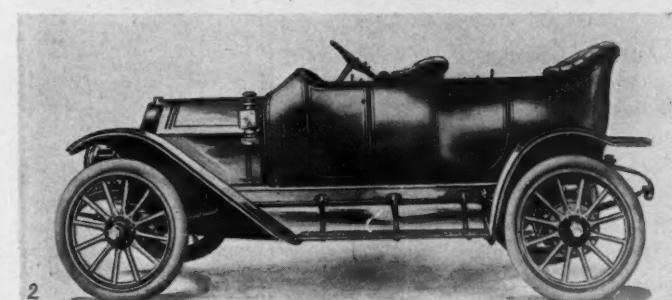
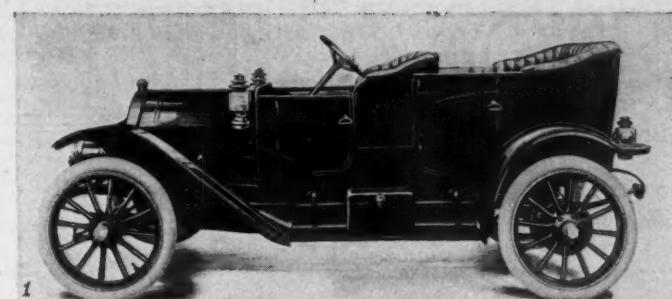


FIG. 2—1, SEMI-TORPEDO; 2, TORPEDO; 3, AXLES, GEARBOX AND STEERING; 4, DEMI-TONNEAU; 5, TOURING CAR

FROM THE FOUR WINDS

SOCIABILITY POSTPONED—The Syracuse Herald sociability run, scheduled for September 24, had to be put over 1 week on account of a severe rain storm. There are over 100 entries for it.

Another Chauffeurs' Club—Branch No. 2 of the Washington Chauffeurs Club was organized during the past week at Everett, Wash., with a charter membership of twenty-five. Branch No. 1 was established in Tacoma about 2 weeks ago.

Over the Simplon Pass—An interesting photograph shows E. R. Thomas in his model K Thomas limousine, crossing the Alps, from Italy to Switzerland, early in May, 1909, by way of the Simplon pass, which was barely opened, and which, on account of the snow at that height, was still regarded as impassable for cars even for a month or so.

Exit Stage Coach—The old stage coach which runs between Clatskanie and Clatskanie Junction, Ore., has made its last trip on account of being supplanted by a motor car, which is operated by Chris Johnson & Son. The new car will accommodate sixteen passengers and is built with top and windshield so that it may be operated on the run all winter.

Has New Style Top—Frank C. Reynolds, an inventor of railway equipment, of Columbus, Ohio, has designed a stowaway motor car. The appearance of the top is the same as an ordinary one when in position, but when lowered the car has the appearance of being stripped. One of the chief advantages of the top is that it can be adjusted or taken down by one person, even by a woman. All that is necessary to adjust the top is to unlock the front braces and force the top up or back as a roll-top desk. A patent has been granted the inventor.

Sand Is Used—The use of oil for dust-laying purposes is now general throughout Connecticut and there is some complaint of a too free use of the dust-layer, and in some instances to obviate the disadvantages due to heavy use of the oil the road surface is sprinkled with sand and when the oil is saturated into the road surface a smooth highway is the result. One of the best examples of oiled road in Connecticut is the Berlin turnpike, an 8-mile stretch from Hartford to Berlin which was formerly opened by the highway commissioner and the Automobile Club of Hartford a year ago this autumn. The surface of the road for the most part is as smooth



E. R. THOMAS CROSSING THE ALPS

as a floor and is a vast improvement over the old dusty highway which formerly existed.

Work for Convicts—The Washington state highway commission has voted \$10,000 and a crew of convicts to be used in putting 12 miles of roadway in shape between Kelso and Kalama, Wash. The new road will be built out of the solid rock on a sort of shelf above the railway tracks.

Two More in Post Run—The entry list for the reliability run from Washington, D. C., to Richmond, Va., and return, October 14-18, under the auspices of the Washington Post, has received two additions, a National and a Parry having been entered during the past week. This brings the number of entries up to twelve.

Wants Protection from Thieves—The Columbus Automobile Club of Columbus, O., at a recent mass meeting took more stringent steps to stop the wholesale stealing of cars from the streets of the city. A resolution was adopted increasing the reward from \$100 to \$500 for each conviction and a committee was named to call on Safety Director McCune to urge better protection. Severe criticism of the lax methods adopted by Mayor Marshall in running down thieves was made by the members of the club. The committee will request that when a car is reported stolen policemen should stop all cars and secure their numbers. Arrangements were started for the annual show which will be held some time in the winter. A committee will be named to look after the arrange-

ments. The headquarters of the club likely will be moved from the Northern hotel block to the Virginia hotel on East Gay street.

Road Resurfaced—The Automobile Club of Maryland reports the 4-mile stretch on the Washington boulevard, beginning at Elkridge, which was recently covered with tar, has been resurfaced with sand and the road is again in good shape.

Honolulu Rates—The rates of steamer transportation for machines from San Francisco to Honolulu is very low, compared with that charged elsewhere, costing only \$25 to \$35 each way between the two places, or \$3.50 per ton of 40 cubic feet.

Helping the Supervisors—A number of Elkhart, Ind., owners have subscribed \$335, and enough is expected to make it even \$400, for the purpose of graveling and otherwise improving the Larue road. The purpose is to demonstrate to the rural residents the value of good highways. The funds will be given into the hands of the regular road supervisors, who have entered heartily into the plan.

Precocious Youth—Ray Dietzel, 14-year-old son of Mr. and Mrs. Henry Dietzel, of Mount Pleasant, Pa., has made a miniature motor car 2 feet in length and 8 inches wide, which is completely equipped with rubber tires, brakes, levers, top and lamps. It made a great hit at the Fremont, O., fair, this month.

Thieves in Indianapolis—During the week of September 19, eight motor cars were stolen in Indianapolis streets and after joy rides of several hours were abandoned, in some instances several miles from the city. In each instance the car was badly damaged, the magneto and other parts being removed from one car. There is some talk of owners and dealers organizing for the purpose of taking some protective steps.

Restoring Old Wire Road—Backed in enthusiastic style by the Springfield, Mo., Republican in its home city, and by the St. Louis Star, J. A. White, a prominent motorist and dealer in Springfield, Mo., is waging an unusually interesting good roads campaign, looking toward the complete restoration of the old wire road over which, 25 years ago, passed the caravan of settlers' wagons, carrying the hardy pioneers who formed the advance guard of civilization in the great southwest. Attention to the present condition of the road was called by the Under Three Flags trip of the Flanders 20 car during the

past summer. Reproduction of photographs of the trip and the story told by the crew of the car stirred the citizens of Springfield to action.

Another Organization—The motor car owners of the Monongahela valley living between Brownsville, Pa., and Monongahela, Pa., are forming a protective association. It will apply for a county charter and will take an active part in pushing the cause of good roads by publishing a book of instructions for drivers' guidance, etc.

Case Car To Race—The J. L. Case Threshing Machine Co., of Racine, Wis., distributors of the Case car, manufactured by the Pierce Motor Co., of Racine, has announced that it will start a racing campaign at once. Strang, who drove the Case, formerly the Pierce-Racine, in reliability tours this season, will manage the racing team of three, the other two members to be selected as soon as possible.

Stirs up Delinquents—When Special Agent Fox, appointed by the Ohio motor car department to look up delinquents, applications for registration received by the department immediately jumped from thirty-five a day to about eighty. Sickness compelled Fox to leave the road and the number of applications then fell to about thirty-five daily. It is expected that another detective will be sent out soon by the department.

Sells in Seven Languages—That New York becomes year by year a more cosmopolitan city is amply evidenced in practically every branch of commercial life. In the salesrooms of the Carhartt at the Hotel Plaza, seven languages are spoken—French, German, Italian, Russian, English, Polish and Spanish—and scarcely a day passes that three or four of them are not in requisition, both for the guests of the Plaza who come to the salesrooms and for casual visitors.

Toronto Show Dates—Dates for the annual Toronto show, held under the auspices of the Ontario Motor League, have been fixed for February 25 to March 4. The large St. Lawrence arena in which most of the former shows have been held will probably again be used and E. M. Wilcox, who managed the two Canadian shows last year, will be at the head of the enterprise. The usual special railroad rates and other novel features will be arranged as attractions for the public.

Buyers' Week Planned—There will be a buyers' week in Indianapolis beginning October 17, and elaborate arrangements are being made to entertain about 8,000 dealers and merchants of Indiana and surrounding states. The week's program will be under the auspices of the Indianapolis Trade Association with which is affiliated many of the motor car concerns of the city. There will be a motor car tour of the city for the visitors and also a smoker, theater party and a huge industrial parade in which several hundred Indianapolis

concerns will display their products. The association left Monday for a 5 days' trade extension trip through southern Illinois, traveling in a special train of sleeping and dining cars.

Progressive Hoosiers—Hoosier farmers have long owned touring cars and runabouts, but it has remained for John Harvey to purchase an Overland delivery wagon for use in his farm work. Harvey lives about 16 miles west of Indianapolis. He used to take almost a day to take his produce to the city and deliver it to various grocers, with a horse and wagon. Now he loads his produce in the motor delivery wagon and gets home shortly after noon.

Takes Kids to School—The chill of the autumn winds, the deep winter snows and the mud and rain of spring will not interfere with the classes of Knickerbocker Hall school in Indianapolis this year because the principal, Miss Julia Ethel Landers, has outwitted the elements. Miss Landers announces to her friends that Will H. Brown, vice-president of the Willys-Overland Automobile Co. has designed and constructed a motor car which will be used this year to take the children to and from school.

Mexico Regulating Speed—The government of the federal district, in which the City of Mexico is situated, has taken the first step towards regulating the speed of motor cars upon the highways that lead to suburban towns. Governor Landa y Escandon has issued an order that gendarmes be stationed at intervals of every few hundred yards along that highway for the special purpose of preventing too fast traveling by motorists. These gendarmes are mounted and keep a close watch upon all cars that travel that road. No speed rate has been fixed by the district government. Each gendarme is given the authority to use his own judgment as to when a car is running at a dangerous rate of speed. Not knowing what the idea of the gendarme may be as to the proper rate of speed the motorists on the Tlalpan road are keeping on the safe side by run-

ning slowly. It is stated that all the other roads leading out of the capital are to be similarly patrolled by gendarmes.

Monongalia Club's Growth—The Monongalia Automobile Club, of Morgantown, W. Va., has increased its membership to forty and has elected Earl Lantz secretary. The club is affiliated with the American Automobile Association and its principal work this fall is the securing of signs at dangerous turns on the streets and country roads.

Engineer for Pittsburg Club—The Automobile Club, of Pittsburg, has secured the services of W. B. Klussman, an engineer, to carry out its scheme of road improvement. He will devote his entire time to the work of improving the roads as outlined by this club, and the remainder of the season he will be busy on the Pittsburg-Meadville highway.

Federation Active—The Pennsylvania Motor Federation is preparing to wage a more active campaign than ever this winter when the state legislature convenes at Harrisburg, Pa. Its campaign of club organizations is proceeding very satisfactorily all over the state. It has also been very active this summer in the work of sign posts and western Pennsylvania shows hundreds of points that have been adorned through its efforts. The federation now has thirty clubs enrolled, besides an individual membership of 4,000.

Regal Finds Bad Roads—The Regal Motor Car Co.'s Plugger is well on its way across the south on its all southern tour. The Plugger is not running on schedule time as on its recent tour through the northern states. Those in charge believed it would be impossible to run a car on schedule over the roads which the south has to offer. A number of them are practically impossible to negotiate. The Plugger at present is west of Richmond, and word from A. L. Riggs, who is managing the trip, indicates that the roads are exceedingly difficult to travel, but that the Plugger is making fair headway in spite of this fact.



INDIANAPOLIS CHILDREN RIDE TO SCHOOL IN OVERLAND

VOLTMETER AND AMMETER CONSTRUCTION

By Joseph B. Baker

THE object of this article is to set forth the features which good commercial electrical indicating instruments for motor cars should have and to explain the principles of operation of the two main types of these instruments now on the market.

All owners and drivers of motor cars should have some knowledge of electrical indicating instruments. They should know how to use the dashboard voltmeters and ammeters that are carried on electric pleasure vehicles, and light and heavy trucks. The instruments now commercially available comprise voltmeters for measuring electromotive force—EMF—ammeters—ampere meters—for measuring current strength, and combined voltmeters and ammeters, voltammeters. They are made of the D'Arsonval and moving-iron types, to be described, and in the following forms: Portable instruments, meaning instruments of a precision approaching or equaling laboratory standard instruments, but designed to be carried about and brought to the testing work; dashboard instruments, for permanent mounting on the car; and pocket instruments, meaning small-sized or watch-case portable instruments of low price.

Some Types of Instruments

Voltmeters, ammeters and voltammeters for car work are of two main types of construction—those having a moving coil, represented by the D'Arsonval instrument, and those having a moving iron armature. In any type of instrument, the indications are given by a pointer, which is caused to move over a scale in accordance with the variation in EMF or in current strength, as the case may be, by the effect of the varying EMF, or current, on a magnetic field contained in the instrument. The pointer is rigidly attached to a pivoted part, termed the moving element, which the varying magnetism causes to turn or deflect against the tension of the spring.

The D'Arsonval instrument—Figs. 1 and 2—so named after its French inventor—contains a permanent horseshoe magnet M, with pole-pieces P brought near each other so as to develop a powerful magnetic field between them. In this field is mounted a light pivoted coil of insulated wire, to which is attached the pointer T, projecting out over the scale. The coil is of very fine wire and carries a very small current, but said current is proportional to the EMF or current strength passing through the instrument. In the usual form of this instrument for commercial use, a pair of light spiral hair-springs S of resilient, non-magnetic metal serve to oppose the movement of the coil by a force directly proportional to the current passing through the coil; so that the pointer, which stands at 0 on the scale when the instrument is not connected to a live circuit, stands at

coil is deflected it opens out one spring and at the same time closes in the other. The uniform field is obtained by proper strength of permanent magnet, quality and proportioning of the soft-iron pole-pieces, and dimensions of airgap.

With the above brief explanation of the general principle of the D'Arsonval indicating instrument, we may now go into the difference between a voltmeter and an ammeter constructed on this principle. First, consider portable instruments having two binding posts and a single scale. The two instruments are much the same in external appearance. A voltmeter, Fig. 3, has a small press-button switch, and binding posts which are often covered with hard rubber insulation to reduce the danger of short circuits and protect the user of the instrument from receiving a shock in handling it; whereas an ammeter, Fig. 4, usually has comparatively heavy uninsulated binding posts—connected to heavy leads inside the case. The difference in the construction and operation of the two is shown in the application of these instruments to measure the EMF of an ignition battery and the strength of the current flowing in the primary-coil circuit—Fig. 5, A and B. In the voltmeter the circuit goes from one binding post to the other through the moving coil and a fixed resistance-coil in series, the total resistance of the instrument circuit being high. The instrument may therefore be connected without injury directly across the terminals of a battery or generator, having an EMF within its range, since the current which the full voltage can send through the instrument is very small, and cannot lower the EMF of the battery or other source of electricity. Yet it is strictly proportional to the EMF, and therefore the instrument may be, and is, calibrated in volts. The ammeter, Fig. 5, B, is connected in the circuit in series, and therefore the entire current of the circuit passes through it. In the instrument itself, nearly all of the current goes from one

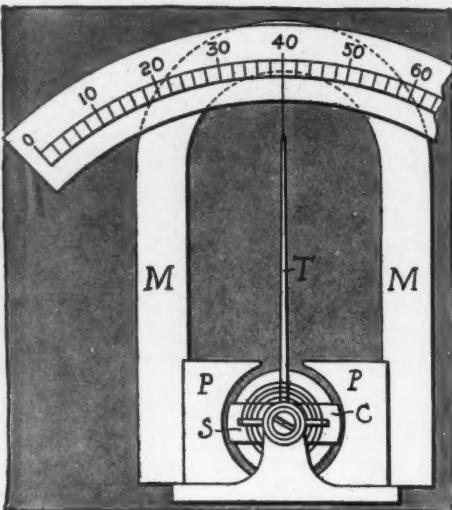


FIG. 1—DIAGRAM OF D'ARSONVAL INSTRUMENT

say 20 on the scale when the instrument is connected up with an EMF or current of given strength, at 40 when the EMF or current is doubled, and so on. The springs also serve the necessary purpose of leading the current in and out of the coil. The movement of the coil against the springs is caused by the reaction between the strong field of the permanent magnet and that due to the weak current passing through the coil, in accordance with the principle of magneto-electric induction, which causes a wire placed in a magnetic field and carrying a current to tend to move at right angles to the direction of the field.

Uniform Reading Scale

A uniform reading scale, in a D'Arsonval instrument, is obtained by equalizing the retractile force of the springs, and by providing a uniform field. The former object is attained by winding the two springs, which are placed one above and the other below the moving coil, in right-hand and left-hand spirals, so that as the

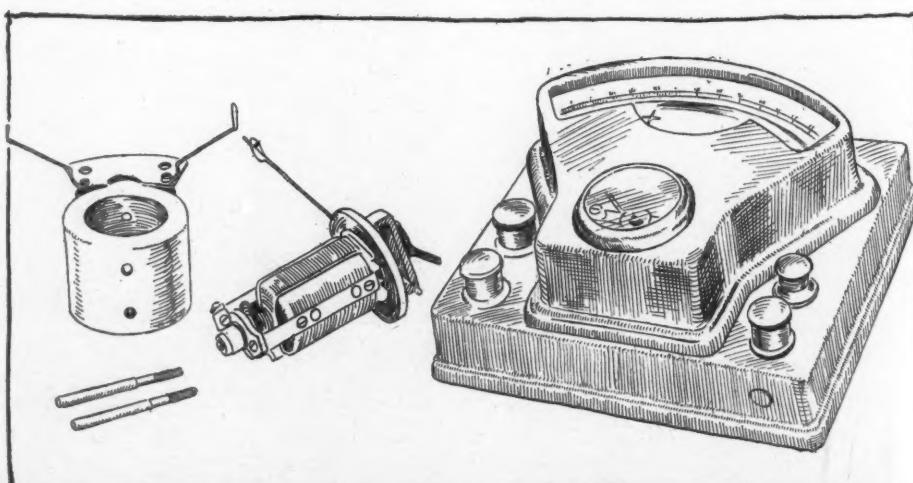


FIG. 2—D'ARSONVAL VOLTMETER

FIG. 3—VOLTMETER WITH PRESS BUTTON SWITCH

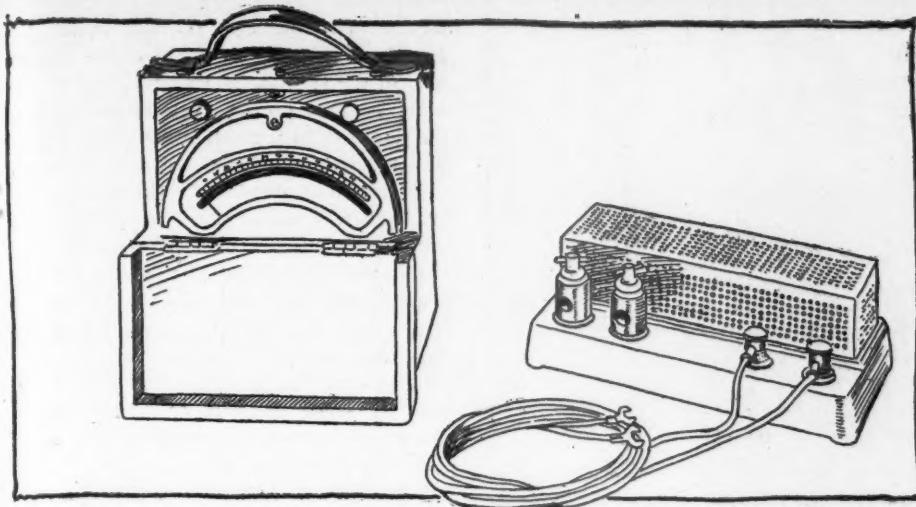


FIG. 4—AMMETER WITH EXTERNAL RESISTANCE BOX

binding post to the other through a bar of resistance metal, in which occurs a small but definite fall of potential equal to the product of the current, C , and the resistance of the bar, R . $E = C \times R$ —in accordance with Ohm's law. It may not be out of place to state here this law, which gives the relation between EMF, E , resistance, R , and current, C , in any circuit in which a steady, direct current is flowing. The law is expressed by the

E
formula $C = \frac{E}{R}$, which may also be written
 E
 R
ten $R = \frac{E}{C}$, or $E = C \times R$, as in the case
 C

already cited.

Since R is a constant, E , the difference of potential between the ends of the bar, is directly proportional to C , the current passing through the bar. The moving coil is connected to the ends of the bar, and the difference of potential causes a weak current, proportional to same, to pass through it. The instrument, therefore, is really a sensitive voltmeter connected to the terminals of the bar. But since E is proportional to C , the instrument may be, and is, calibrated in amperes. The resistance-bar is called the shunt, because it shunts or diverts from the moving coil most of the current passing through the instrument. It is sometimes placed entirely outside the instrument case, and at a distance—external shunt ammeter, Fig. 4—for convenience in running heavy wiring; the instrument proper being connected to it by a pair of light, flexible wires. The use of an external shunt obviates bringing the heavy wiring of the main circuit to the actual instrument, which would be clumsy and inconvenient in many cases.

Portable voltmeters and ammeters are sometimes made with two or even three scales on the same scale arc, corresponding to additional windings in the instrument, terminating in extra binding-posts. Thus a common two-scale voltmeter adapted for use for both electric and gasoline cars is one having one scale reading from 0 to

150 volts, and one reading from 0 to 15 volts. The former scale is to be used for measuring the EMF in charging the motor battery of an electric vehicle, and the latter gives greater accuracy of readings when testing single cells of a motor or ignition battery.

Dashboard instruments of the D'Arsonval type are often made on the two-in-one plan; a voltmeter and an ammeter mounted side by side in the same case, Fig. 6. The selection of scales for an ammeter for an electric vehicle depends on individual conditions of charging current. In most cases a single-scale instrument 0-100 amperes, is suitable. On gasoline cars a two-scale instrument, 0.30 and 0.3, is suitable, the latter scale giving good accuracy in testing ignition current.

Instruments built on the D'Arsonval principle are readily rendered dead-beat by the use of the phenomenon of so-called eddy or Foucault currents. A dead-beat moving element or pointer in an electric indicating instrument is one which comes promptly to rest at the proper point on the scale, when the circuit to the instrument is closed, without dancing back and forth.

The moving coil is wound on a light frame of high conductivity metal—gener-

ally aluminum—and encloses a soft-iron cylinder, fastened to the instrument base co-axially with the coil and permanent magnet pole-pieces, in such a way that a strong magnetic field is developed with only a small airgap, consisting of the clearance for the coil frames to move freely in. Now, eddy currents are generated in a conductor when it is moved in a magnetic field, and the generation of these currents absorbs power, which tends to check the motion of the conductor. In this connection any movement of the aluminum frame in the field is quickly checked, or damped. Therefore, when an instrument is connected up to a live circuit, the pointer comes to rest quickly when it reaches the proper place on the scale, very much as if it experienced a viscous mechanical resistance to its motion. The obtaining of good dead-beat quality is very necessary in any electrical indicating instrument for commercial use, not only for quick reading but in order to prevent injury to the pivot jewels, bending of the pointer by striking against the side of the case, or other harm by sudden and violent motion of the moving element.

Moving-Iron Instruments

In voltmeters and ammeters of the moving-iron type, including so-called pocket instruments of small size, Fig. 7, the moving element to which the pointer is attached consists of a simple armature or vane of soft iron. This armature is supported on pivot bearings in a magnetic field. In one class of these instruments a fixed voltmeter or ammeter coil, having a fine-wire winding or a coarse-wire winding, respectively, is mounted so as to set up a magnetic field at right angles to the permanent magnet field, and the armature is caused to deflect by the variation in the strength of the coil's field by variation in EMF or current strength in the circuit to which the instrument is connected.

The Hoyt pocket ammeter, complete, and with cover, dial and pointer removed, has a soft-iron vane A , to which the pointer is attached, which swings on pivots in the U-shaped brass strip B , and is normally held in the zero position by the field of the horseshoe magnet, C . D is an ammeter coil consisting of a few turns of coarse wire wound over a straight core of soft iron at right angles to the main field. The magnetic flux due to current passing through D distorts the main field, causing the vane and its attached pointer to take up a new position deflected from the zero position through an angle approximately proportional to the strength of the current.

Elements of Good Quality

The desirable features in the foregoing instruments are, in order of importance: Durability, accuracy, and quick-reading ability. An electrical indicating instrument may be designed for a high degree of accuracy but may be so delicately constructed that it will endure only the most careful handling. On the other hand, it

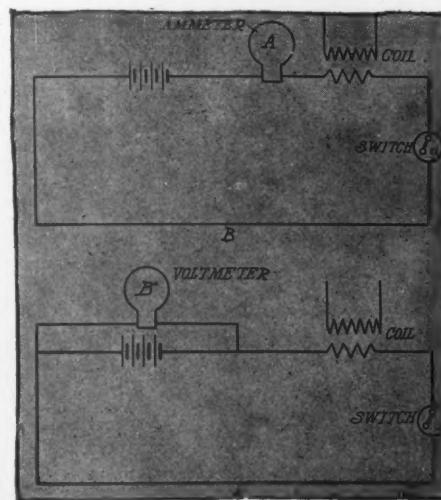


FIG. 5—WIRING FOR AMMETER AND VOLTMETER

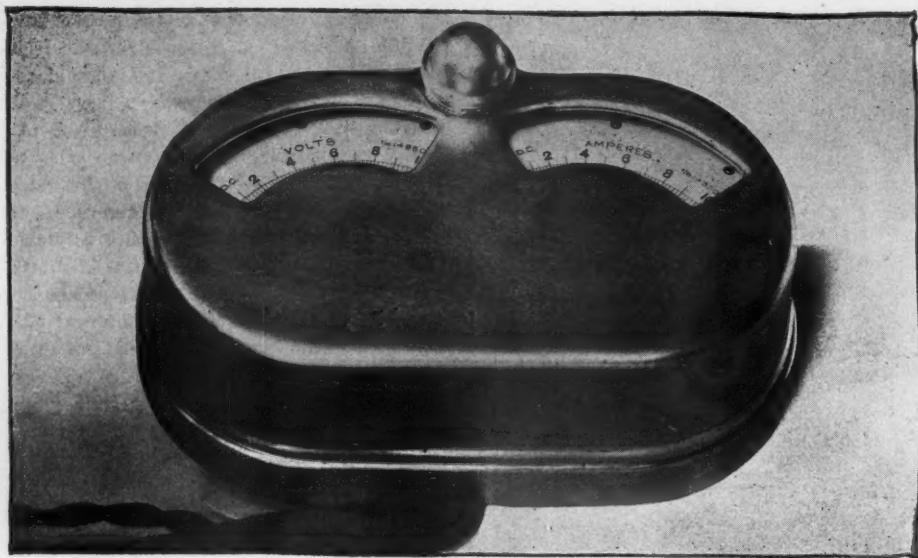


FIG. 6—WAGNER DASHBOARD INSTRUMENT WITH DOUBLE SCALES

may be sturdily built but with such crude pivots, such a non-permanent magnetic system and poorly constructed moving element and scale as to be grossly inaccurate from the start. The desideratum is reasonable accuracy, sufficient for all motor car purposes, with such durability in standing the inevitable shocks and vibration of car use that the initial accuracy will remain unimpaired for long periods. Voltmeters and ammeters especially designed for motor cars are now to be had at a fair price; and these instruments will, with reasonably careful use, outlast several cars, being far superior to the cheap instruments formerly sold as a part of the equipment of the vehicle as it came from the builder.

Dashboard or portable instruments should have a fairly uniform scale or scales, so made as to be free from warping; a moving element which is dead-beat, or at any rate quick-reading; a moving element light enough and jewel bearings of good enough quality to stand the shocks and vibration of the car without causing zero error or increasing the friction at the pivots sufficiently to affect the accuracy of the instrument; a strictly permanent magnet system and retracting springs; a strong, well-made case, moisture and dust-proof, preferably with the instrument proper iron-clad to eliminate errors caused by stray magnetic fields due to wires in the vicinity carrying currents, and good, securely fastened binding-posts—all for a moderate price. The front opening or dial window should be wide, in both dimensions, to admit plenty of light so that the scales may be read easily, and it is desirable that dashboard instruments have a lamp-bracket attached, to illuminate the scales at night.

A great deal of nonsense is current about high accuracy in indicating instruments. In motor car work, a precision of one-half of 1 per cent, if constant, is all that is necessary for any measurements or testing that will be required.

Volt-ammeters are also made having both fine-wire and coarse-wire coils and utilizing the same scale for both voltage and current indications.

In some makes of pocket instruments quick-reading ability is sought by making the moving element as small and light as possible. In others, an air vane is attached to the moving element to damp the motion of the pointer. The binding posts are usually made in pointed or cupped form, so as to facilitate making contact with the binding-posts of a battery cell by simply touching one instrument binding-post on one battery binding-post and using a short flexible cord connection from the other instrument binding-post to the other battery binding-post.

WORCESTER CLUB FIRE

Worcester, Mass., Sept. 26—The ten rooms of the Worcester Automobile Club in the Chase building, 44 Front street, considered the finest club rooms in New England, were completely destroyed by fire early Thursday morning at an estimated loss to the club and building owners of \$175,000. The fire, which

started in the office of the club shortly before 5 o'clock, destroyed the entire seventh floor of the building as well as that of the one below it. Five firemen were injured fighting the flames. As a result of the fire Charles Garrity, who has been assistant secretary and steward of the club for the past 3 years and who was one of a party of four who left the club room shortly before the fire was discovered, was asked to tender his resignation, which he did on his own account just 2 hours before he received the notice from the board of governors of the club. Of the total loss the Worcester club is the loser by about \$35,000, of which amount about two-thirds was covered by insurance.

GENERAL MOTORS RUMORS

New York, Sept. 28—Special Telegram—Rumors and then more rumors, all false, with regard to the financial plans of the General Motors Co. have been vigorously circulated during the past week. The sale of bonds to Chicago and Michigan capitalists had been alleged and denied. The same may be said for the Boston deal, which is said to involve \$2,500,000, and a report outlining an immense underwriting of the whole General Motors project by metropolitan bankers, the terms of which were alleged to be a bond issue of \$15,000,000, which were out yesterday, were all punctured almost as soon as they were floated.

As a matter of fact, negotiations of the utmost importance to the company and the trade are pending at this time, but they have not been closed. The reports that will be published concerning the New York underwriting deal in particular have been thoroughly discredited. At the offices of the company no official statement as to the status of affairs could be secured save that negotiations were underway, looking to a solution of the financial problem involved. Owing to the fact that the situation has numerous ramifications and is far from simple from any viewpoint, any forecast of the true result at this time would be impossible.

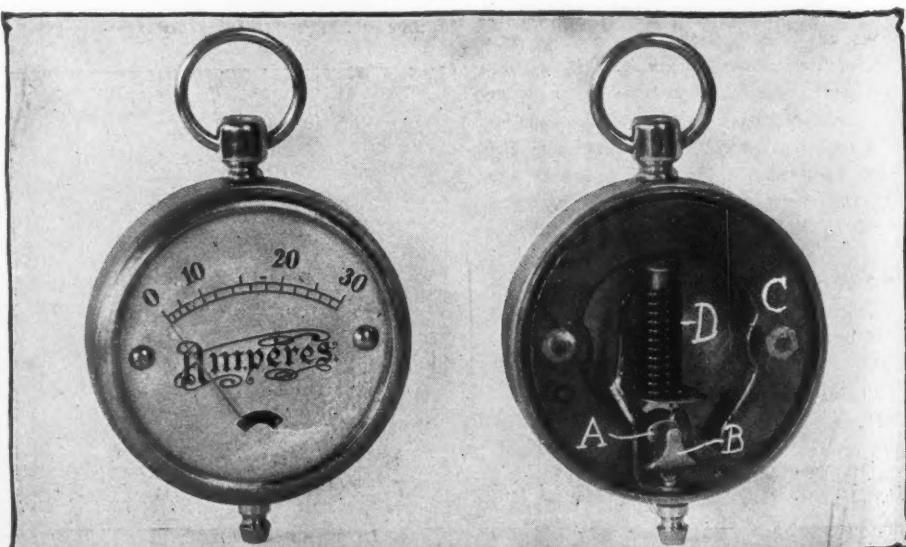


FIG. 7—HOYT POCKET AMMETER SHOWING INTERNAL PARTS



The Motor Car Repair Shop

Hints for the Amateur

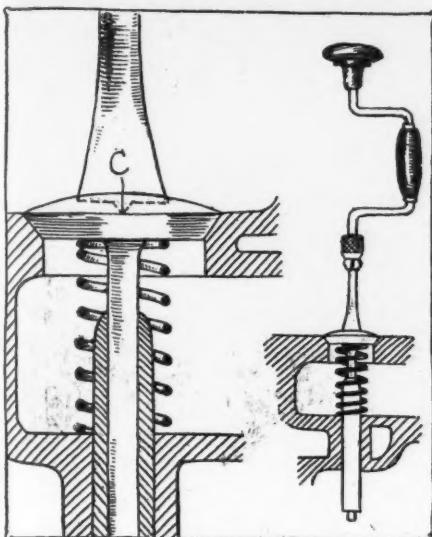


FIG. 1—KINKS ON VALVE-GRINDING

A FEW years ago all the valves of the poppet type that were fitted into the cylinders of a motor were ground in by hand. Practically the same process then used still is employed in many factories and in most of the garages and repair-shops throughout the country today. Valve-grinding is one of the simplest and therefore one of the first operations that the repair-shop or garage apprentice is called upon to learn, and as it is rather a tedious operation many attempts have been made to reduce the labor connected with it.

To grind in a valve the usual method is to take out the valve and, after scraping all carbon from and around the seats both on the valve and in the cylinder, apply an abrasive consisting of emery and oil, ground glass and oil, or any of the already mixed compounds on the market, then replacing the valve and oscillating or turning it back and forth on its seats, lifting it about every ten strokes to distribute the abrasive.

There are many mechanics who maintain that a valve cannot be properly ground-in unless it is done entirely by hand with an ordinary screwdriver; this, however, is not true, for a brace and bit with a spring behind the valve, as illustrated in Fig. 1, can be most advantageously employed if the same care is used in changing and distributing the abrasive as would be used if a screwdriver were employed. The screwdriver method is so tiresome that the frequent rest periods, which are employed either in changing or examining the valve-seats, insure that this feature of the work is well done; with the brace and bit, the grinding is rendered so easy that the operator is liable to neglect raising the valve at frequent intervals or removing it and applying fresh abrasive. To eliminate as much of the work as possible the

brace and bit can be used with a spring under the valve to raise it. The screwdriver bit should have a teat or projecting point at its center, as indicated in C Fig. 1, to keep the bit from working out of the slot. This teat is designed to fit into the center hole which will be found on almost all valves. The spring should be so large that it will fit over the end of the valve-guide, and of sufficient tension to lift the valve and brace about $\frac{1}{8}$ to $\frac{1}{4}$ inch when the weight of the hand is lifted from the top of the brace. It is important that when a brace and bit is used it should

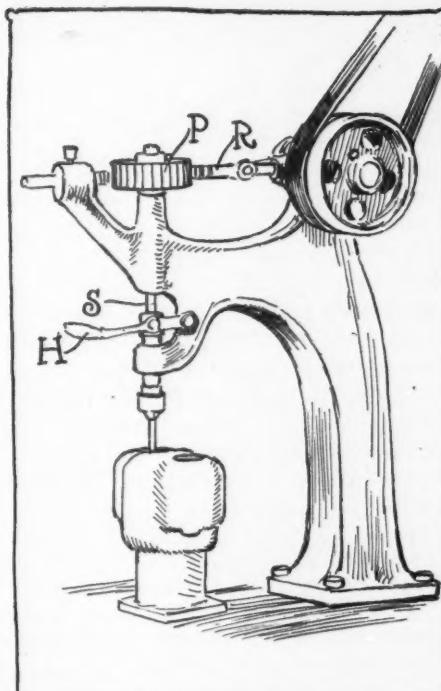


FIG. 2—VALVE-GRINDING MACHINE

not be revolved continually in one direction but should be worked back and forth a quarter to half a revolution at a time in just the same manner as if a screwdriver were employed.

Valve-Grinding Machine-Tool

In the Moon motor car factory valves no longer are ground by hand in the old way but a machine somewhat similar to that shown in Fig. 2 is employed for this purpose. The machine looks something like a drill-press and operates in practically the same manner except that the spindle S does not revolve in one direction but has an alternating movement which is brought about by means of the rack-and-pinion gear arrangement employed to drive it. The rack R moves back and forth, and imparts a vacillating motion to the pinion gear P which is attached to the spindle; a handle H is attached to the spindle for

the purpose of raising and lowering it and the valve has a spring under it as illustrated in Fig. 1, to keep the head of the valve in contact with the screwdriver bit fitted in the chuck at the spindle end.

About Valve-Springs

It sometimes occurs that the valve-springs of a motor will become weak and give considerable annoyance before the cause is discovered. Springs too weak to hold the valves on the cams will produce clattering noises owing to belated seating of the valves. The best way to increase the spring-tension on a valve is to fit a new spring, but if a cheaper method is desired one has but to stretch the spring a mere trifle by slightly opening up the coils with a screwdriver or by securing one end coil of the spring in a vice and tying a cord or the like onto the other end coil to get a grip and then stretching it a little in the ordinary way. Another way to increase the tension is to place a couple of washers under the lower end of the spring as illustrated at W in Fig. 3. It has been suggested that if a spring should break on account of a defect in material or heat-treatment a temporary repair might be made with a washer as shown at A Fig. 3. Valve-springs that are too stiff are to be avoided because they may close the valves with so much force as to break the stems at the key, or the heads from the stems, and even if the valves do manage to stand the constant hammering action, an excessively stiff spring consumes power which might be used to a better advantage.

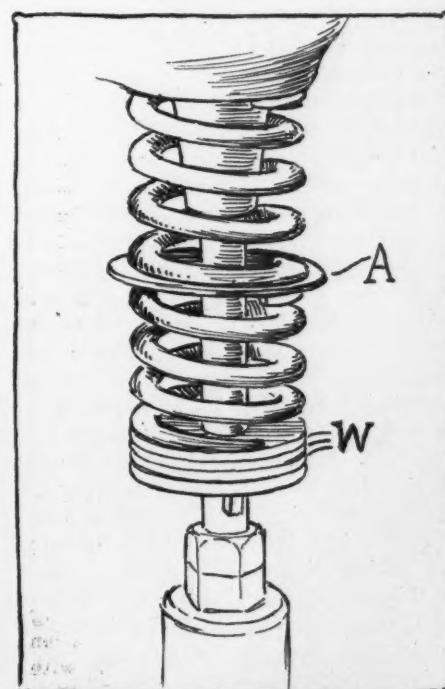


FIG. 3—INCREASING VALVE SPRING TENSION

VARIED USES OF COMMERCIAL CARS



PACKARD TRUCK CARRYING CAMP EQUIPAGE OF PENNSYLVANIA MILITIA

WORK OF PACKARD TRUCK

THE utility of motor trucks recently was demonstrated in connection with the encampment of the Pennsylvania national guards at Gettysburg, Pa. During the encampment the Packard truck at the disposal of the quartermaster carried the tents from the train to the camp. Two loads of approximately 3 tons each took care of all the tents for the entire regiment. Ordinarily it takes two six-horse teams to do this transportation work.

In conjunction with the recent aviation meet at Omaha the Packard truck carried the supplies, transporting 250 steel cylinders of hydrogen and one of the balloons of this complete equipment, a distance of over 3 miles.

HARVESTING WITH ELECTRICS

That the motor truck and tractor is invading the field of the horse even on the moderate-sized farm is shown in the accompanying illustration in operation in agricultural work in harvesting wheat and in haying and other similar service. An electric truck of 3.5 tons capacity is seen in the illustration at a nursery located several miles from Rochester, N. Y. This truck when used during the harvesting season was able to handle 617 bundles of wheat which yielded 45 bushels after being threshed while the usual two-horse load consisted of 260 bundles. The use of this electric-power vehicle in the above service as well as the harvesting of the hay crop has been of great advantage on account of the time element being so important, due to uncertain weather conditions and the great loss due from rain or storm at the critical time in the harvest season. At this nursery the electric truck has been used to great advantage in delivering shrubs and trees to the railway station during the shipping season, returning with supplies and fertilizer to the farm. This

electric storage battery truck was recommended for this work by the Rochester Railway and Light Co., and wherever current can be supplied from power and lighting stations on farms conveniently located, electric vehicles of this type can be employed with economy and great satisfaction.

HACKMEN FROZEN OUT

The hackmen of Omaha, Neb., are alarmed by a condition of affairs that seems likely to threaten their business. The motor livery keepers who cater to a higher class trade and who can afford to pay a little more for their privileges are driving the cabbies out of their places along the curb where they solicit business. The motor drivers also are having trouble among themselves. At the last council meeting an ordinance was passed providing that no chauffeur should keep a permanent stand along the curb without the consent of the man in front of whose place of business he is. This was found necessary because the men who have obtained such permission have been bothered by outsiders who crowd in ahead of them and refuse to vacate. The hackmen, however, seem to have no recourse against either variety of for-rent cars, and must take their chances on getting a place to carry on their business. The motor cars are crowding them away from in front of the principal hotels.

FEAT OF U. S. TRUCK

The United States Motor Truck Co., Cincinnati, O., manufacturer of the U. S. trucks, reports an interesting run of one of its trucks from Cincinnati, O., to Chicago, a distance of 361.4 miles made in 26 hours and with a consumption of 24 gallons of gasoline and 2 gallons of oil. This truck is made in two models, A for 1,500-2000 pound load and B for 2,000-3000-pound load. The engine employed is a two-

cylinder opposed type rated at 20 horsepower. Ignition on it is furnished by an Atwater Kent uni-sparker system. The gearset is a three-speed selective sliding clutch type in which the gears always are in mesh. A cone clutch is furnished. Transmission from the jackshaft is through side chains and in the running gear construction of this car use is made of a heat-treated steel frame supported in front through semi-elliptic springs with elliptics in the rear. The axles are of nickle steel, the front one 2 inches square and the rear one of round section $2\frac{1}{2}$ inches in diameter. Road wheels are carried on Timken roller bearings. On the model A truck 34 by $2\frac{1}{2}$ -inch tires and 36 by 3 inches rear tires are used. On the model B truck the tire sizes are 34 by 3 and 34 by $3\frac{1}{2}$ front and rear respectively. Left-hand control is used on all models with the spark and throttle levers under the steering wheel and the gear-shift and the emergency brake levers at the driver's right. A variety of body styles is furnished such as open delivery, full-panel delivery, standard express and heavy truck type.

WISCONSIN IS OPTIMISTIC

That the 1911 season will see the greatest boom the commercial or freight vehicle industry ever has experienced, is the prediction of Milwaukee motor truck builders. Not that the passenger vehicle business is to find itself pushed into the background in favor of expenditures for the freight car, but it is those who have had experience with the motor car who are planning to introduce self-propelled vehicles into business and industry, fully satisfied that it is economy and practicability to do so. Milwaukee and Wisconsin have a number of large producers of motor trucks, whose opinion as a whole is weighty, representing more than 25 per cent of the truck builders of America. There are Brodesser

Motor Truck Co., Abresch-Cramer Motor Truck Co., Crown Commercial Car Co., Sternberg Mfg. Co., Johnson Service Co., Meiselbach Mfg. Co., Mueller Motor Car Co., Stephenson Motor Car Co., in Milwaukee; the Monitor Automobile Works, at Janesville, Wis.; the Kissel Motor Car Co., of Hartford, Wis., the latest in the field, and numerous other companies which merely assemble trucks and delivery cars. These men are not building a large number of trucks, that is to say, numbers running into the thousands. But it is conservative to say that all are increasing their production at least 25 per cent, and they have the extra business on their books today. They are building on a sound foundation. There is no inflation or over-expansion.

FIRE APPARATUS ECONOMY

In vigorous opposition to the statement made by J. H. Kratz, chief of the Manitowoc, Wis., fire department, that motor fire apparatus is not yet sufficiently developed to make it practical for any but cities of immense size, Chief Thomas A. Clancy, of the Milwaukee fire department, says: "Motor-propelled fire apparatus has reached the point where it is practical and practicable. Before many years have passed self-propelled apparatus will supplant horses in every city in the United States. The speed of the trucks and the money-saving in purchasing and maintaining trucks favors this view and entirely supports it."

Up to 2 years ago Chief Clancy held motor appliances in disfavor, but now he is an ardent advocate of their use. "The advantages of motor fire engines, for instance, are many. There is economy, speed, ability to cover a wide territory and remaining under a shower of sparks that would mean removal of horses, thus leaving the engine to the mercy of the



HARVESTING WITH ELECTRIC ON NEW YORK STATE FARM

flames in emergencies. The driver of a motor engine handles the appliance at the fire, dispensing with the services of an engineer. The stoker, driver of an engine and driver of a hose wagon also are dispensed with. Then there is the advantageous feature of reaching a fire quickly—the efficiency of rendering service at the early stage of a conflagration. There is only one drawback, and that is, many fire appliances now on the market are built by men who have given their entire attention to pleasure-vehicle manufacture. Practical fire mechanics must take a hand in building motor fire apparatus. I also believe it is folly to try to combine engines, chemicals and hose wagons on one chassis. As soon as each is separated there will

be a greater demand for each type of appliance."

Chief Clancy says a saving of .50 per cent can be effected in feeding and maintenance of horses in the Milwaukee fire department by the use of motor appliances.

BREWERY MAKES TEST

The Gambrinus brewery, of Portland, Ore., was recently given a demonstration of a Frayer-Miller truck of 2½ tons. The total cost of operating the big motor for a day of 8 hours was \$4.23. The truck made five 6-mile trips from the brewery to different points in the city, carrying an average of 5,000 pounds at each trip. The total distance traveled was 30 miles; weight of freight hauled, 27,175 pounds; time, 2 hours 55 minutes; wages of driver, \$3; cost of gasoline and oil, \$1.20; cost per mile for operating truck, 30 miles at 14 cents, \$4.20; cost per ton, 31½ tons at 31 1-9 cents, \$4.20; actual time required in making 3-mile trip, loaded, 20 minutes, light, 15 minutes.

RACINE BUYS PATROL

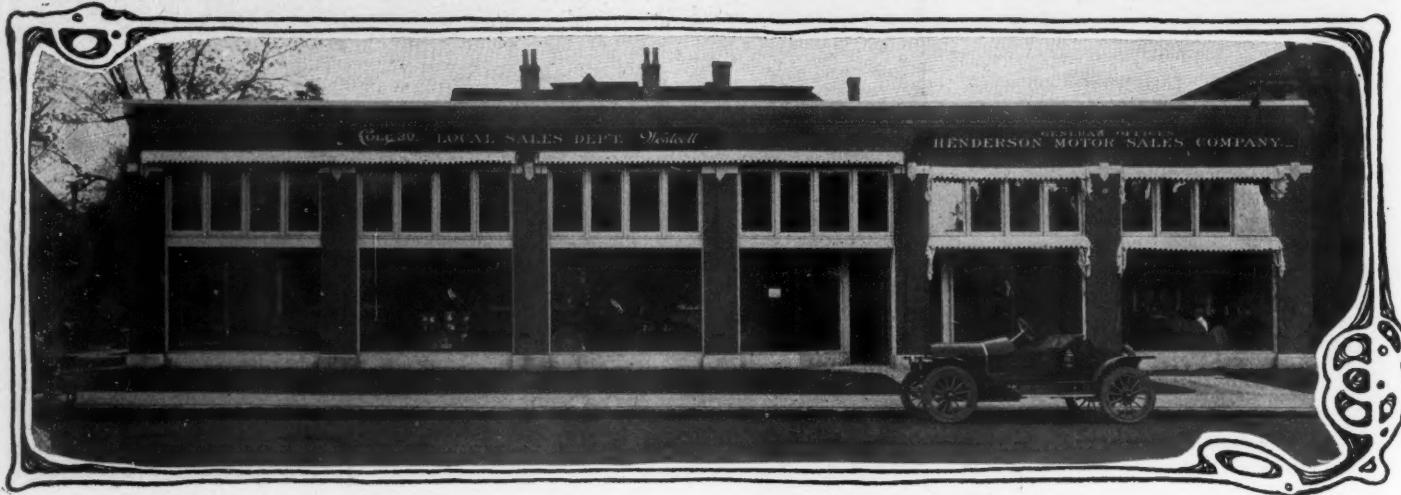
The city of Racine, Wis., has decided to purchase a Studebaker combination ambulance and police patrol wagon. All city officials and members of the Racine fire and police commission traveled to South Bend, Ind., last week to visit the Studebaker works and close the contract.

The city council of Columbus, O., has made provisions for the purchase of two motor police patrols to take the place of the horse-drawn patrols which have been in use in the city for years. The value of motor cars in police affairs at times of riots was clearly demonstrated during the street car strike in Columbus, and the council was easily prevailed upon to place motor cars at the disposition of the police chief. The cars will be ordered at once.



U. S. TRUCK ON RUN FROM CINCINNATI TO CHICAGO

Among the Makers and Dealers



GENERAL OFFICES OF THE HENDERSON MOTOR SALES CO. IN INDIANAPOLIS

NUSSBAUM Resigns—E. P. Nussbaum has resigned as general representative of the Jones speedometer. His plans for the future are not yet announced.

In New Vortex Plant—The Reichenbach Laboratories Co., of Chicago, maker of the Vortex carburetor, has moved from 2339 South State street into its new plant at 57-59 East Twenty-fourth street. Sixty men now are employed.

Cole Declares Dividend—Stockholders of the Cole Motor Car Co., Indianapolis, have received 30 per cent dividend, a more or less interesting fact in view of the fact that many newspapers have been trying to convince the public of a depression in the motor car industry.

Handling Marmon in Chicago—The Tenant company which handled the Peerless and Marmon in Chicago prior to the establishment of the Peerless branch, now is confining its efforts to the Marmon. The Tenant company has moved to 2447 Michigan avenue and E. M. Hon is manager.

Chauffeurs Strike—Demanding an increase of \$2 per week, eight chauffeurs employed by the Dayton Taxicab Co. of Dayton, Ohio, went on strike Friday. A demand was made also that the force of drivers be doubled. One man returned to work Saturday and the seven vacancies were immediately filled by the company. The men were receiving \$18 per week.

Larzelere Starts New Company—H. B. Larzelere, sales manager of the Chadwick Engineering Works for the past 5 years, has organized the Nance Motor Car Co. at Philadelphia, which is building a popular-priced six-cylinder car. Larzelere will be president and general manager of the Nance company and M. H. Adams who for the past 2 years has been an active and prominent factor in the administration of

the Chadwick company's affairs will have entire charge of the sales and advertising departments of the Nance company.

New A. L. A. M. Members—Announcement is made that the Garford company, of Elyria, Ohio, and the Kissel Motor Car Co., of Hartford, Wis., have just been granted licenses under the Selden patent. There are now eighty-three different makes of cars licensed under the Selden patent.

C. L. Welch Resigns—C. L. Welch has resigned his position of sales manager of the Inter-State Automobile Co., Muncie, Ind. Mr. Welch has been identified with the business almost a dozen years and will enjoy a month's vacation before taking up active work again.

Body-Builders' Strike—Two hundred workmen in the woodworking department of the plant of the Charles Abresch Co., builder of motor car bodies, 398 Fourth street, Milwaukee, Wis., walked out on Monday morning because of the institution of the piece-work system to supplant the hour system of pay. Efforts are being made to induce the remaining 500 workmen in the blacksmithing, trimming, painting and upholstering departments to strike in sympathy.

Paterson Doing Well—According to officials connected with the W. A. Paterson Automobile Co., that concern is turning out four times as many cars this year as it did at the same time in 1909. A contract has been closed with the Paterson Motor Car Co., of Minneapolis, Minn., for the agency for the machine in Minnesota and the Dakotas. The Early Motor Co., of Columbus, O., has taken the agency for the central and southern portions of Ohio. A carload of the cars have been shipped to Des Moines, Ia., for exhibition at the Iowa state fair, and the Standard Motor Co., of Des Moines, has taken the agency for that state. A carload of the machines also

has been sent to the Columbus, O., fair. The 1911 models are ready and are being sent to different fairs for exhibition.

Gives a Factory Site—The city of Clintonville, Wis., has donated a tract of 8½ acres of land near the railroad tracks as a site for the plant of the Four-Wheel Drive Automobile Co., organized some time ago to manufacture a passenger and freight vehicle with a final drive on all wheels. The foundations will be constructed this fall.

Stoddard Expansion—Contracts will be let in the near future by the Dayton Motor Car Co., manufacturer of the Stoddard-Dayton, for the erection of a building 1,000 feet long and 80 feet wide, also a power plant. The company is making a number of big improvements at the North Dayton plant, and the building will be one of a series.

New Thomas Secretary—Charles R. Stevenson, formerly of New York, has been elected secretary and auditor of the E. R. Thomas Motor Co. Stevenson also has been elected a member of the executive committee and will become one of the directors of the company. Stevenson for the last 7 years has been a member of the firm of Miller, Franklin & Stevenson, business economists and public accountants, of New York, Boston and Chicago.

Big Order for Regals—Bert S. Bingham, Pacific coast manager of the Regal Motor Car Co. of Detroit, has returned from an extended tour through the northwest. He reports the placing of the Regal agency with the Graham Motor Car Co. in Portland. This organization has placed specifications for no fewer than 500 Regal cars for the Oregon territory. A new company called the Regal Garage Co. has been organized at Spokane for the handling of the Regal in the eastern half of the state of Washington. Earl C. Finley is presi-

dent and H. Preston secretary of this concern, which has taken 250 cars for its territory.

Garford Buys Body Plant—The plant of the Reading Metal Body Mfg. Co. of Fleetwood, Pa., has been purchased by the Garford company of Elyria, Ohio.

Crosley Starts Company—Powel Crosley, Jr., formerly of National Motor Vehicle Co., Indianapolis, has organized the Central Motor Sales Co. and opened offices and salesrooms at 308 East Main street, Muncie, Ind. This concern will act as distributor for the Inter-State in northern Indiana and will add several lower-priced cars to fill out a complete line.

Mitchell Strike Settled—The state board of arbitration of Wisconsin has succeeded in settling the strike of machinists and grinders in the plant of the Mitchell-Lewis Motor Co. at Racine, Wis. On Monday morning, September 26, more than one-half of the 600 strikers went back to work and the remainder will be taken on as quickly as possible. The strike lasted 1 week, but caused no serious inconvenience to the Mitchell-Lewis company.

New Fort Dodge Garage—The new garage of the Fort Dodge Automobile Co. of Fort Dodge, Ia., has a basement that extends throughout the entire length of the building. Here are located stock room, vulcanizing department, battery-charging outfit and repair shops. The first floor is used entirely for show room and garage purposes. The second story is divided into apartments. The building is fireproof. The show room is 32 by 50 and the garage is 108 by 54.

Furner Chicago Overland Agent—The Furner Motor Car Co., Edward Furner president, has taken over the Overland retail business in Chicago, formerly handled by the Overland Motor Car Co. The Furner company has Cook, Du Page and Lake counties. C. W. Price, formerly retail representative, will handle the Overland wholesale business for the state with the exception of the southern tier of counties. The Furner company is at 2425 Michigan avenue.

Good Year for Gramm—At the annual stockholders meeting of the Gramm Motor Car Co. the number of directors was reduced from nine to five and the following were elected directors: A. L. White, W. T. Aggerter, W. M. Coakley, B. A. Gramm and F. E. Lamb. A. L. White was elected president, B. A. Gramm, vice-president and general manager; W. T. Aggerter, treasurer and Frank E. Lamb, secretary. The statement showed that a \$600,000 business had been done by the company in the past year. After charging off 5 per cent for depreciation, 10 per cent for patents and machinery and allowing a dividend of 6 per cent a surplus of \$140,000 was left in the treasury. The management expects to double the output during the coming year by operating the new plant at Lima. The installation of the new machinery will

cost \$130,000 and an outlay of a half million dollars is represented in the new plant.

Buick Commercial Show—The Buick Motor Co. is holding a commercial show this week in its new store at Twenty-first street and Calumet avenue, Chicago.

First Stoddard 30 Out—The Dayton Motor Car Co. turned out of its factory last week the first of the new Stoddard 30 models. Delivery will begin this week. The first goes to Los Angeles, where it will be placed on exhibition before being put into service by its owner.

Takes Over Woods Agency—The Minneapolis agency for the Woods electric has been bought over entirely from the old agent, the Moore Carving Machine Co., including all stock of cars and fixtures, by R. H. Magoon and W. S. Cramner who will handle the northwestern territory as distributors. The Woods company also has established a north shore branch in Chicago, in charge of M. P. Beeson, at 6536 Sheridan drive.

Territory Is Divided—Motor Age, September 15, in a statement to the effect that the Phoenix Auto Supply Co. had taken the agency for Missouri for Stromberg carburetors, was somewhat misleading, in that this concern is distributing agent for St. Louis county, Mo., and the Kansas City Auto Supply Co., Kansas City, Mo., is distributor for the remainder of the state. This latter company is also distributor for Oklahoma and Kansas.

Napier Strong on Sixes—According to A. N. Perry, of Boston, American representative of the Napier, who has just returned from a visit to the factory, the English company will turn out practically nothing but six-cylinder cars next season, the one four-cylinder design being principally for taxicabs. The three pleasure cars will rate 30, 45 and 65 horsepower and the taxicab 15. There are more than 1,500 Napier taxicabs in London now, out of a total of 6,000 in use in the city. He says there are 3,000 men employed by the plant now and business is booming across the

water. The tendency there seems to be for a 5-inch stroke on all kinds of motors, Mr. Perry says.

Fosdick with Fiat—Harry Fosdick announces that he has become factory sales manager of the Fiat Automobile Co., Poughkeepsie, N. Y., with New York offices at 1786 Broadway.

L. C. Anderson Appointed—The Anderson Carriage Co. of Detroit announces the appointment of L. C. Anderson as advertising manager. He also will have control of the company's legal interests.

Westerdale Succeeds Cordner—H. E. Westerdale has been appointed manager of the Chicago Studebaker branch to succeed E. Cordner, whose resignation takes effect October 15. Mr. Westerdale will have in charge both the retail and wholesale business of the branch.

Knott Going to Texas—John T. Knott has resigned as general manager of the Elkhart Motor Car Co. and has sold his stock in the company, preparatory to removing to Palestine, Texas. G. L. Scofield has been chosen to fill the vacancy made by the resignation of Mr. Knott.

Atlanta Shifts—The usual fall shifts are taking place in Atlanta, Ga. The Henderson Motor Co., of Atlanta, has opened headquarters to sell Cole and Wescott cars. F. J. Long, formerly of the Olds-Oakland Co., has taken charge as manager. The Warren Motor Car Co. has had a representative in Atlanta looking for some one to take charge of a local agency. The Stearns company has opened a local branch with John Toole in charge.

Insurance Rates Going Up—Agents for motor car insurance in Indianapolis have been notified of an increase in rates, dating from October 1. The reason given is the heavy losses the companies have had to pay in recent months. Increases will include fire, theft, liability and collision risks. Agents have also been asked not to urge owners to place collision insurance on their machines because exceptionally heavy losses have been paid through the collision clauses.



BIG BUILDING OF FORT DODGE AUTOMOBILE CO., FORT DODGE, IOWA



Development Briefs

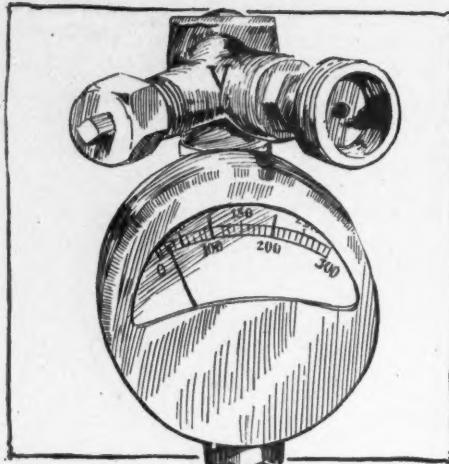


FIG. 1—SEARCHLIGHT TANK VALVE

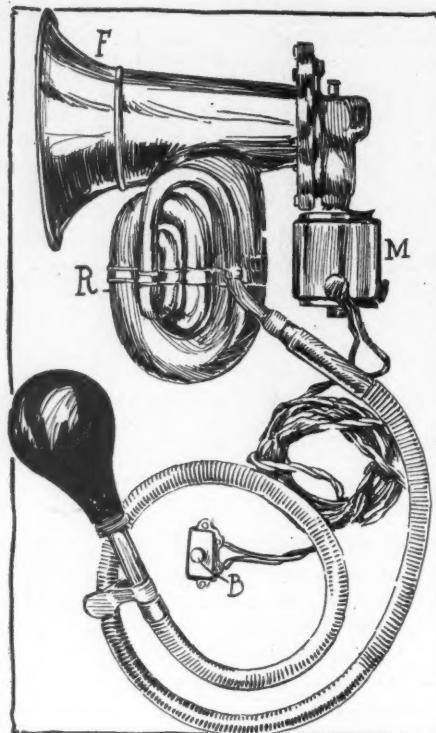


FIG. 2—COMBINATION KLAXON HORN

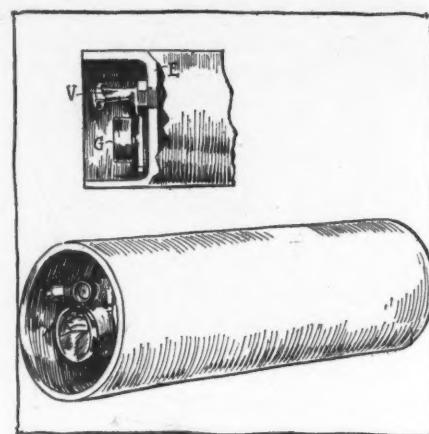


FIG. 3—SEARCHLIGHT GAS TANK

Searchlight Gas Tank

THE Searchlight Gas Co., Pittsburg, Pa., engaged in the business of acetylene storage and transportation, uses a system which includes the absorption of acetylene gas in a special solvent, these being contained in cylinders 22 inches long and 6 inches inside diameter. These cylinders are cold stamped from steel, and the feature of them is the recessed end E, Fig. 3, which allows of the insertion of the valves V and gauge G, as well as the safety plug. Recessing the end in this manner is the safety factor for these valves. By means of the Y valve V, Fig. 1, control of the gas is achieved, and the safety valve is to prevent an explosion by allowing the gas to escape should the cylinder come in contact with fire. The cylinders are copper plated and it is the intention to soon market an enamelled cylinder.

The solvent used in these tanks is claimed to be protected by United States and Canadian patents, and is of such efficiency that one cylinder will give 52 hours of lighting per charge. It is stated that refilling stations are in process of erection in Chicago, Detroit, Philadelphia, Kansas City and Dallas, Tex.

Reliable Tire-Saver

The Elite Mfg. Co., Ashland, O., manufacturers of jacks for motor cars, has on the market what is known as the Reliable tire-saver, which is a jack intended to raise the wheel of a car off the floor when the car is in a garage, so that the complete car weight does not rest on the tire. Fig. 4 illustrates the use of the jack in that it has a swivel top T, which rests beneath the hub of the wheel, a fact which makes it easy to operate in that the driver does not have to get under the back of the car to elevate the wheel, as is the case where the jack is put under the axle. This jack is constructed throughout of malleable iron and the four of them, one

for each wheel, forming a complete set for a car, weigh 25 pounds. With these jacks it is claimed a car can be placed within 6 inches of the wall and sufficient room is left for its operation. If desired the swivel top T may be placed under the axle and used for a jack.

The Combination Klaxon

The Lovell-McConnell Mfg. Co., Newark, N. J., is manufacturing a combination Klaxon horn, Fig. 2, which is a horn with

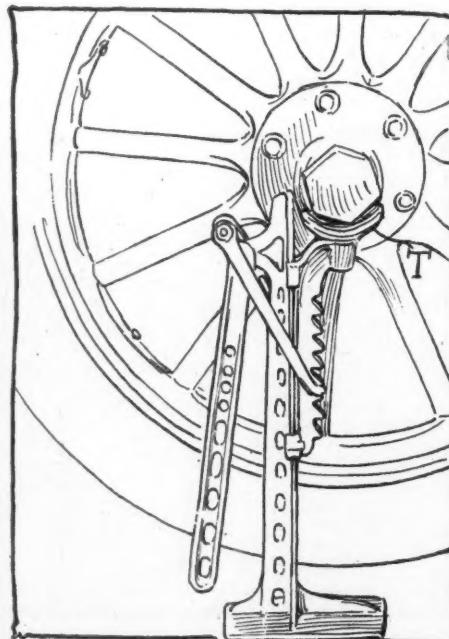


FIG. 4—RELIANCE TIRE-SAVER

a common funnel F serving for a regulation Klaxo electric generated by the motor M or a standard reed horn R controlled by bulb. The object of the combination is that the Klaxon controlled by the press button B can be used for long-distance warning on country roads and the reed horn, controlled by the bulb, for driving in the city. The Klaxon electric is the regulation motor-operated diaphragm type used on all Klaxon instruments.

Rex Combination Tool

The Perfection Tool and Accessory Co., 1777 Broadway, New York, is marketing the Rex tool, Fig. 7, which is a two-part one made up of two handle sections, one part sliding into a slot in the other. This tool performs twelve operations, shown by the numbers, which are as follows: hammer; 2, tack puller; 3, valve lifter; 4, riveting mallet; 5, wire puller; 6, monkey wrench; 7, $\frac{1}{2}$ -inch pipe wrench; 8, 1-inch pipe wrench; 9, tire iron; 10, screw driver; 11, tire iron; and 12, chisel. The tool weighs 1 pound 2 ounces and is $10\frac{3}{4}$ inches long.

Flash Gas Lighter

The Motor Specialties Co., Boston, Mass., is marketing the Flash apparatus for lighting acetylene headlights by electricity so that the driver does not have to leave the seat of the car to light the lights or to extinguish them. The entire operation of turning on the acetylene gas and forming the electric spark, which lights this gas, is in that the inlet pipe A from the gas tank passes through the casting C on its way to the headlight, to the outlet pipe G. A movement of this handle turns on the gas, in that the inlet pipe G from the gas tank passes through the casting C on its way to the headlight, to the outlet pipe G. Because of this the handle controls the valve that shuts off or turns on the gas. It will also be noted that there is a battery connection B, which wire connects with a device carried on the burner, Fig. 8. By means of this device a spark

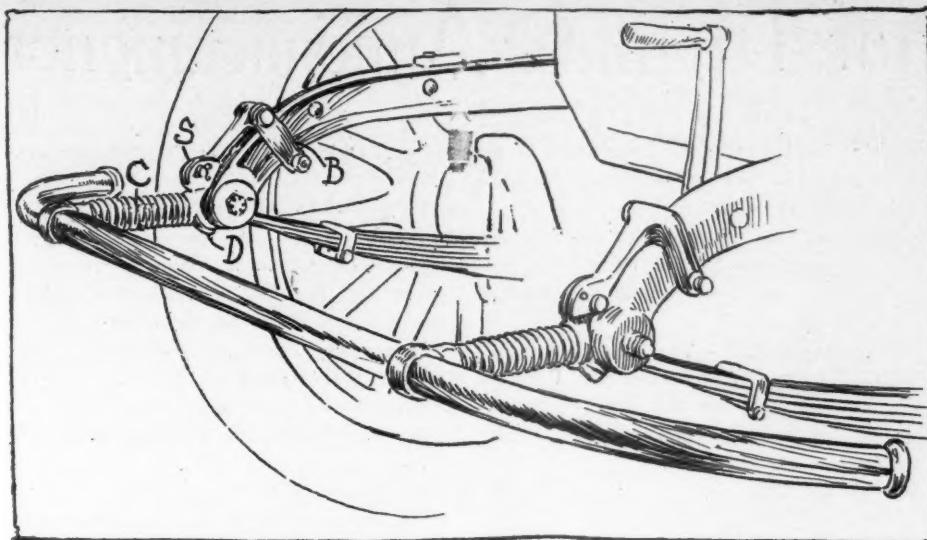


FIG. 5—THE BUCKEYE LAMP BUMPER ATTACHED TO A MOTOR CAR

bridges the gap S, which is immediately above the hole K in the burner B, through which the gas escapes. This spark ignites the gas. The ignition apparatus is supported on the burner through bracket B1. This electric system is entirely independent of the ignition system on the motor. A coil is furnished with the set by which the electric current is raised in voltage sufficient to bridge the spark gap S.

The Buckeye Bumper

The Central Brass Fixture Co., Springfield, O., manufactures the Buckeye bumper, used for protecting headlights on cars. This bumper can be attached to any car with channel frame pieces without drilling the frame, a wrench being the only tool needed. One feature of this bumper is the swivel, S, Fig. 5, which allows for a horizontal position of the coil spring C, irrespective of the curve of the frame member. The bumper attaches by a bracket, B, which spans the frame member and has a curved seating, D, which rests against the end of the frame. All of the shock is absorbed through the spring C.

Motor Car Literature

A de luxe catalog is being issued by the F. B. Stearns Co., Cleveland, O., detailing the Stearns cars—the car with the white-line radiator—for 1911. Complete description and specifications of all models to-

gether with illustrations are given, the latter showing interior views of the runabout and touring models in vestibule and open design as well as its landaulets and limousines types. Additional illustrations show the various departments of the factory. The catalog is printed in four colors.

The Firestone Tire and Rubber Co., Akron, O., is calling attention to its oversize Firestone tires through the medium of a 15 by 28-inch hanger.

The Studebaker electric cars for 1911 are featured and described in a very attrac-

tive catalog. Four full-page illustrations show the model 17 in coupe, victoria phaeton, and landaulet with folding and standing front. The catalog is pleasingly designed on delicately tinted paper.

"Knox Motor Trucks" is the title of a forty-paged catalog describing and illustrating the commercial vehicles built by the Knox Automobile Co., Springfield, Mass., including its trucks, delivery wagons, patrol and fire vehicles, emergency and wrecking wagons, buses and sight-seeing vehicles.

"What the Motorists Should Know," is a booklet dealing with subject of lubrication, issued by the Vacuum Oil Co., Rochester, N. Y., in the interest of its Mobiloid.

"Electric Dont's" is the title of a booklet the Babeck Electric Carriage Co., has mailed to the trade, calling attention to its electric vehicles.

The story of the Franklin trek is told and illustrated in an attractive manner in a green-covered booklet issued by the H. H. Franklin Mfg. Co.

The Gramm Motor Car Co., Bowling Green, O., is mailing a small folder calling attention to its trucks.

The DeTamble 1911 motor cars, through the medium of a folder are being brought to the attention of the public.

The Champion Ignition Co., Flint, Mich., is mailing to the trade a 17 by 22 inches hanger entitled "The Winners"—Oldfield, Burman and Chevrolet who used the A-C spark plugs during the racing season of 1909-10.

The Cartercar Co., Pontiac, Mich., has issued a souvenir booklet portraying the many feats that its car can do. There are thirty full-page illustrations, showing the Cartercar at the summit of Mount Hamilton, doing stunts at state and county fairs, and many other performances under varying conditions.

The Moon Motor Car Co., St. Louis, Mo., announces its new Moon model 30 with the fore-door arrangement, also this same model in toy tonneau and torpedo types. Large-sized chassis illustrations in this advance announcement are used, which bring out clearly the particular features of the Moon cars.

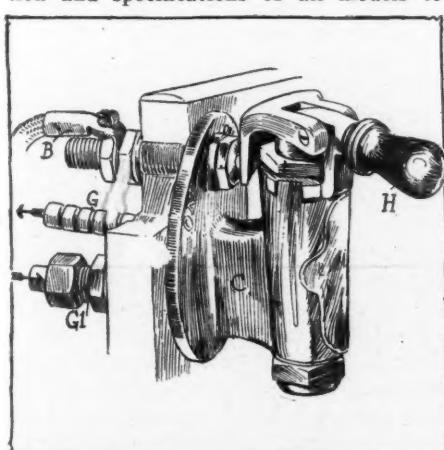


FIG. 6—THE FLASH GAS LIGHTER

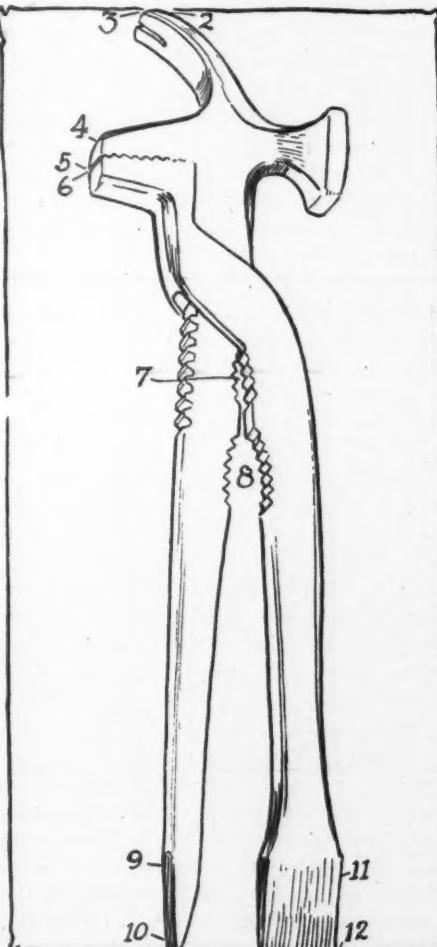


FIG. 7—THE REX TOOL

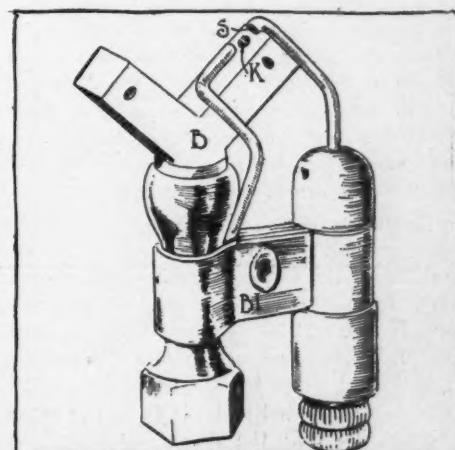


FIG. 8—FLASH GAS LIGHTER



Brief Business Announcements



PITTSBURG, PA.—The Sewickley Auto Co. of Sewickley has been incorporated with a capital of \$5,000.

Monroe, Wis.—Ernest L. Edelman has been appointed representative of the Maxwell in Green county.

Buffalo, N. Y.—The Bison Motor Sales Co. of Main and Barker streets will handle the Abbott-Detroit for 1911 in addition to the Krit.

San Antonio, Texas—The Southwest Texas branch of the Buick Automobile Co. of Dallas has located at 242 Avenue C in this city. The concern is managed by H. L. Knight.

Minneapolis, Minn.—F. W. Gerhard, of the Redfield Motor Car Co., Redfield, S. D., closed with the MacArthur-Zollars Motor Co. for the Everitt and Black Crow agencies for the coming year.

Boston, Mass.—Charles Putnam, who has been in the motor business on the Pacific coast for some years, returned to Boston last week to accept a position with the G. H. Proctor Supply Co., agent for the Mora.

Worcester, Mass.—The Hupmobile, which for the past year has been handled by Charles Bushon, has been turned over to George W. Largeess. The new headquarters of the Hupmobile will be in the Belmont garage.

Columbus, O.—Arthur M. Crumrine, who has been secretary of the Columbus Automobile Club for about a year, has resigned the position and is now manager of the Love Garage Co., which is in the hands of Receiver E. E. Minnock.

Milwaukee, Wis.—Frank J. Edwards, manager of the Kissel Kar Co., Milwaukee, Wis., the largest distributor of the Kissel Motor Car Co. of Hartford, Wis., has orders on his books for more than 600 cars. Edwards handles about 75 per cent of the Kissel production in the middle west and south.

St. Louis, Mo.—The Stearns Motor Car Co. of St. Louis has ordered constructed a modern garage and salesroom at Clarendon and Delmar avenues, opposite the new home of the Park Automobile Co. It will be of fireproof construction, and equipped with the most modern devices for the care of cars. The concern handles the Stearns, Fuller and Brush.

Indianapolis, Ind.—The following changes have been announced in Indianapolis for the coming season: The Waverley, formerly handled by the Hearsey-Willis Co., will be represented by the Holcomb Motor Car Co.; the Reo represented for several years by the Gibson Auto Co. will be distributed in Indiana by the State Automobile Co.; the Avery company has added a line of Avery trucks to its line of

farming implements; the Inter-State Motor Sales Co. will have the Winton in addition to the Inter-State.

Spokane, Wash.—The Cadillac Garage Co. has commenced work on a new concrete garage at Second avenue and Walnut street.

Providence, R. I.—The state of Rhode Island for the Abbott-Detroit will be handled for 1911 by the Whitten Motor Vehicle Co. of 200 Meeting street, Providence.

Portland, Ore.—E. E. Cohen, Arnold Cohen and J. C. Beck are the incorporators of the United Automobile Co. of Portland, Ore., with a capital stock of \$50,000.

Worcester, Mass.—The Franklin Square garage has been taken over by the Milford Automobile Machine Co. of Milford. Fred S. Howard will have the local branch of the company in charge.

Houston, Texas—The Victoria Motor Car Co., composed of T. L. Stern and L. W. Daniel, has established a garage in the Gillespie building. It has the agency for the Oldsmobile and Oakland.

Columbus, O.—The Monnett Auto Brass Co., with W. P. Monnett as general manager, has opened a plant at 62½ East Spring street for the manufacture and repair of all brass parts of cars and other vehicles.

New York.—The Manchester Garage Co. has leased the five-story building at 234-236 West One Hundred and Eighth street for a term of years. The lessees are altering the structure into a garage which will be ready by October 1.

Louisville, Ky.—Plans have been completed for the erection of a one-story brick and stucco garage to be built at the northeast corner of Brook and Broadway for the Urwick Machinery Co. The building will be 50 by 68, to cost about \$8,000.

Youngstown, O.—The Republic Rubber Co. has let contracts for the erection of a large addition to its plant, by which the tire capacity will be increased 100 per cent. The addition will be 80 by 200 feet and six stories high. The company now has under construction an addition 90 by 250 feet, which will be ready for occupancy soon.

Columbus, O.—The Early Motor Car Co. of Columbus has placed its organization on a slightly different basis for the coming season's campaign. The business has been divided into the motor car and the accessories departments. Nelson J. Ruggles has been made manager of the motor car department and A. I. Fishbaugh, manager of the accessories department. For 1911 the Early company will have the

central Ohio agency for the Rambler, Haliday, Paterson, Babcock electric, Warren-Detroit and the Chase motor truck.

Columbus, O.—The garage of Kunz & Meileke of Coshocton, Ohio, has been purchased by Franklin Thomas of Pittsburgh who will conduct it in the future.

Lancaster, Pa.—L. P. Birkenbach has bought the interest of J. J. Keating in the Lancaster Auto and Cycle Supply Co. and will conduct the business in the future.

St. Louis, Mo.—Wiley F. West, of Atlanta, Ga., has been appointed St. Louis manager for the Firestone company. He succeeds O. O. Petty, who goes into business for himself.

Kanova, W. Va.—A new plant will be established in this city for the manufacture of rims and wheels by D. E. Hewitt of Huntington, W. Va., and J. M. Skinner of Toledo.

San Diego, Cal.—An exclusive electric garage, under the name of Electric Emporium Co., will soon be opened in San Diego at D and Thirteenth streets, handling the Columbus electric.

Toledo, O.—The Simplicity Supply Co. has been incorporated with an authorized capital of \$10,000 to buy and sell cars and accessories by William Frostler, Samuel J. Rose, M. L. Fonts, E. J. Watson and J. B. Rosenstein.

Connellsville, Pa.—Work & Clark have completed a new garage on Apple street. The plant they vacated on South Pittsburgh street will be taken by Uniontown parties who are about to establish an agency in Connellsville.

Hartford, Conn.—The Buick Garage Co. which lately took over the Buick in Hartford and Tolland counties, is to locate about November 1 in the old Boardman stables. It was the original intention of the concern to erect a new garage at the corner of Park and Main streets. A new front is to be put in the building.

Detroit, Mich.—The Abbott Motor Co. of Detroit announces the following agencies for Abbott-Detroits placed last week: Sullivan Auto Co., South Charlestown, Ohio; J. Joe Feicht, Pittsburg, Pa.; James H. Wright, Auburn, N. Y.; George L. Reiss, New York; J. Lindesmith & Co., Lima, Ohio; Royal Auto Co., Minneapolis; Baum Iron Works, Omaha, Neb.

Milwaukee, Wis.—George W. Browne, factory representative in Milwaukee for the Willys-Overland Co., has opened a suite of offices on the first floor of the Colby-Abbot building, Milwaukee and Mason streets, adjoining the Studebaker headquarters. The show rooms are in the Bates-Odenbrett Automobile Co.'s garage at 503-507 Broadway, Milwaukee. Besides

the Overland and Marion, the Marmon is included in this agency.

Minneapolis, Minn.—The Royal Auto Co. of 517 Second avenue has taken on the Abbott-Detroit line for 1911.

Monongahela, Pa.—The Eureka Automobile Co. has moved into its new quarters on Main street. William L. Lendefeld is the proprietor of this company.

Kansas City, Mo.—The new garage and salesrooms of the Midland Motor Co. have opened for business at 306 East Fifteenth street. Carl J. Simons will handle the agency here.

Rochester, N. Y.—Thomas J. Northway of 92 Exchange street has taken on the Abbott-Detroit and is building an addition to his present garage and salesroom to accommodate the new line.

San Diego, Cal.—Plans are now being prepared for a handsome two-story brick garage for the Bateman-Buoy Co. at the southeast corner of Twenty-first and D streets, 50 by 100, to cost \$10,000.

Hartford, Wis.—The Kissel Motor Car Co. will build in the neighborhood of 1,500 cars for 1911, not including commercial cars, the first models of which have just been issued. The 1911 Kissel will be produced in five chassis types.

San Antonio, Texas—The Cadillac Automobile Co. of Texas has established its headquarters for southwest Texas in San Antonio. The new company is located on San Pedro avenue and Evergreen street near the electric park. The garage is two-story, fireproof and concrete.

Louisville, Ky.—The American Automobile Mfg. Co. will take over the Standard Club property on Fifth avenue between Chestnut and Walnut. President Berton B. Bales says they will move from the present quarters in the Lincoln building and use the old club building as office, salesroom and warehouse.

Columbus, O.—The Auto Supply Mfg. Co. of Cleveland has been incorporated with an authorized capital of \$10,000, to manufacture and sell all kinds of motor car equipment and accessories. The incorporators are B. L. Wilson, James F. Wilson, Wade M. McGrath, E. B. Wilson and O. P. McGrath.

St. Louis, Mo.—Construction work will begin October 1 on a new two-story addition to the plant of the Victor Automobile Mfg. Co., at Boyle avenue and Papin street. These stories will be erected on top of the present building. On the completion of the addition, the concern will greatly increase its output.

Columbus, O.—Articles of incorporation were filed recently by William Pfium, John L. Baker, Charles A. Dale, George L. Baker and H. G. Brentinger of Dayton, for the Dayton Electromobile Co., which will manufacture electric motor cars. The company has a factory site at Fourth and St. Clair streets, Dayton, where the machines will be made. The

RECENT INCORPORATIONS

Chicago—Logan Square Automobile Co., capital stock \$50,000; to manufacture motor cars and accessories; incorporators Frank Ginner, C. F. Normac and G. N. Harmon.

Harrisburg, Pa.—Automobile Rental Co., capital stock \$5,000; incorporators C. W. Johnson, J. Paul Johnson and Wendell Howard.

Harrisburg, Pa.—Anderson Automobile Co., capital stock \$20,000; incorporators John C. Andrews, Harold Allen, and R. H. Frank.

New York—Miller Commercial Car Co., capital stock \$100,000; incorporators S. E. Overender, C. H. Derrick, and W. S. Jenkins.

New York—Walk Auto Tire Co., capital stock \$125,000; to manufacture motor car tire machinery and supplies; incorporators F. R. Hansell, G. H. Martin, and S. C. Seymour.

New York—Merit Motor Car Mfg. Co., capital stock \$50,000; to manufacture motors, engines, motor cars, etc.; incorporators E. H. Knight, J. H. Riviere, and E. C. Billings.

New York—Overland Sales Co. of New York, capital stock \$100,000; to deal in motors, engines, wagons, boats, and vehicles; incorporators C. T. Silver, E. A. Widham and J. A. Schaefer.

Indianapolis, Ind.—Commercial Car Sales Co., capital stock, \$100,000; to deal in motor cars; directors, B. S. Dean, Calvin Shoemaker and Tillie Huff.

Columbus, Ohio—Columbus Motor Car Transportation Co., capital stock, \$100,000; incorporators, G. W. Pope, James T. Liddy, M. J. O'Rourke, N. H. Wilson and G. W. Poor.

Cleveland, Ohio—Auto Supply Mfg. Co., capital stock, \$10,000; incorporators, B. L. Wilson, T. F. Wilson, W. McStrath, O. P. McStrath and C. B. Wilson.

New York—Tyron Auto Pump Co., capital stock, \$10,000; to manufacture motor car tire pumps; incorporators, Edward E. Tyron, Thomas Jacobs and Arthur W. Leonard.

New York—Gramm Motor Truck Co., capital stock, \$10,000; general motor truck business; incorporators, Walter F. Magill, Philip S. Tilden and Lucille G. Tilden.

Boston, Mass.—Motor Car Service Co., capital stock, \$5,000; incorporators, Frederick E. Dewey and J. Edward Lavell.

Boston, Mass.—Brush-Sampson Boston Co., capital stock, \$2,000; deal in motor vehicles; incorporators, Frank S. Tyler, Lucius S. Tyler and Harold S. Merry.

Boston, Mass.—National Motor Car Co., capital stock, \$25,000; deal in motor cars; president and treasurer, F. A. Wyman.

Boston, Mass.—Boston Auto Coach Co., capital stock, \$50,000; deal in motor cars; incorporators, T. K. Ruth, Richard S. Teeling and Jeremiah S. Sullivan.

Lewiston, Me.—Maine Supply and Garage Co., capital stock, \$200,000; to manufacture and deal in agricultural implements, motor cars, vehicles, etc.; incorporators, Arsene Callier, Henri P. Bevhard and L. J. Brann.

Brooklyn, N. Y.—Newkirk Garage and Taxicab Co., capital stock, \$25,000; to store, rent and deal in motor cars, etc.; incorporators, Delphin H. Spicer, Walter L. Watson and Frederic A. Behrens.

Brooklyn, N. Y.—Simplica Automobile Co., to manufacture, sell and deal in motors, cars and engines of all kinds.

Jersey City, N. J.—United Motor Des Moines Co., capital stock, \$2,000; to deal in motor cars; incorporators, H. O. Coughlan, L. H. Guenther and C. H. Jarvis.

Newark, N. J.—Economy Auto Supply Co., capital stock, \$30,000; incorporators, Theodore Kaplan, Edwards Ellin, and Bernard Miller.

Paterson, N. J.—Center Garage Co., capital stock, \$25,000; to deal in motor vehicles; incorporators, Joseph Martin, William A. Jacobson and Maurice Price.

Paterson, N. J.—Somerset Garage Co., capital stock, \$25,000; to deal in motor cars; incorporators, W. C. Horton, John Auble and William Simpson.

authorized capital of the company is \$250,000, it is announced.

Worcester, Mass.—The White agency in this city has been taken over by Harvey I. Cashman, formerly traveling salesman of the company from its home office. Cash-

man has established headquarters at the corner of Commercial and Foster streets.

St. Louis, Mo.—The agency for St. Louis for the King tire has been taken by Dr. J. Jacobson, 1833 Cass avenue.

St. Louis, Mo.—The Automobile Owners' Association, agent for the Winton six, will occupy the garage which formerly was the home of the Columbia company, on Olive street.

Butler, Pa.—The Atwell Automobile Co. has been formed by J. C., Samuel S. and Floyd Atwell. It has applied for a Pennsylvania charter and will establish a garage next month.

Los Angeles, Cal.—The Thomas Motor Car Co., formerly represented by Wilson & Buffington Co., has opened an agency at 824 South Olive street. A. M. Young will be president and general manager.

Worcester, Mass.—Charles E. Dustin, of this city, has been appointed local agent for the Pope-Hartford, formerly handled by the Pilot Garage Co., which recently went into the hands of a receiver.

St. Louis, Mo.—The United Motor St. Louis Co. has leased a building on Chestnut street, near Twelfth, which will be used as a storage garage and repair shops for the Maxwell and Columbia cars.

Minneapolis, Minn.—Walter D. Rightmire last week joined the Fawkes Auto Co. in the capacity of city salesman and hereafter will devote his efforts to the Marmon, American, Reo and Matheson.

Columbus, O.—C. Roy Clough has resigned as the manager of the Columbus branch of the Charles Schiear Motor Car Co. Gus Schiear, formerly of Cincinnati, has taken up the management of the Columbus branch, which is the agent for the Hupmobile and Velie.

Beloit, Wis.—George H. Cram has started work on the erection of his new garage on Pleasant street. It will be two stories high, with ground dimensions of 44 by 130 feet, of steel and concrete. The ground floor will be unobstructed by posts or supports.

Eaton, O.—The Cyriacks Motor Co. has been incorporated with an authorized capital of \$15,000 for the purpose of manufacturing motor cars and accessories by F. R. Cyriacks, F. R. Christman, Rachael Christman, F. C. H. Kurzrock and Magnolia R. Kurzrock.

Toledo, O.—The Warren Motor Sales Co. of Toledo has been incorporated with an authorized capital of \$40,000 to operate a sales agency and repair shop. The incorporators are S. P. Holmes, Charles E. Doan, John McKenna, John J. Duck and F. W. Whittlesey.

Wilmington, Del.—The T. C. Bradford Automobile Co. of this city, of which T. C. Bradford is the head, has taken the agency for the Hudson for this peninsula, which comprises all of the state of Delaware, nine counties on the eastern shore of Maryland and two Virginia counties.



Legal Lights and Side Lights

A RAILROAD CASE

WHERE a motor car was driven on railroad tracks at a crossing because the gates were negligently left open, and then stopped to let a train in front of it pass, and another train passed so close to the motor that the vibration started the car down a slight grade, whereby it ran into the train, the negligent keeping open of the gates was the proximate cause of the accident, says Louisville and N. R. Co. v. Eckman, 125 S. W. Ky., 729. If, under the above facts, the driver could have discovered, by ordinary care, the approach of the train, though it gave no signals, his negligence in starting the car, whereby it ran against the approaching train, causing injury to the car and driver, would be the proximate cause of the injury.

SPLITTING HAIRS

In an action for personal injuries caused by collision of plaintiff's buggy with defendant's motor car, driven by his chauffeur, the court instructed that if plaintiff's buggy was run into by a car operated by one employed by defendant to do so, who was then operating it in the course of his employment, and who ran it at such a high speed, or negligently ran it at a speed greater than was reasonable in view of the traffic and use of the highway, or so great as to endanger life and limb, and plaintiff's injury was directly due to his negligence, the jury should find for plaintiff. It was held that this instruction was correct. An instruction that if the car was in the chauffeur's charge at the time of the accident, but had been taken out by him at the request of defendant's

married daughter, not a member of his household, for her own use and not on defendant's business, the jury should find for defendant was not inconsistent with the previous instruction so as to warrant the conclusion that the jury disregarded it in finding for plaintiff. This came in Winfrey v. Gazarus, 128 S. W., Mo., 276.

In an action, Scholl v. Grayson, 127 S. W., Mo., 415, for personal injuries from being struck by a motor car, where contributory negligence of the injured party was charged, in passing hurriedly from the sidewalk into the street near the car and so near it was impossible to stop in time to avoid the accident, and evidence in support of this defense was offered, it was proper to permit plaintiff to prove the possibility of stopping the machine after the dangerous position of the injured person should have been seen; not as a basis of recovery, but to overcome the defense, it was declared.

SHOULD HAVE STOPPED

Webb v. Moore, 125 S. W., Ky., 152. Plaintiff, in a recent Kentucky case, testified that, while driving an ordinarily gentle horse on a city street, the horse became frightened at defendant's car when it was 139 feet from her, and as the car approached the horse became more frightened, and, turning quickly, threw plaintiff to the street; that the car was then 80 feet away, coming toward her, and ran over her, without any attempt being made to stop it. Defendant testified that he was driving at the rate of 5 or 6 miles an hour, and first discovered the horse's fright when he was 26 feet away;

that the horse turned quickly to the side of the street on which defendant was driving, when defendant turned the machine in on the pavement to avoid collision; that he was obliged to leave the pavement on account of a house being built close thereto, and when he returned to the street there was room between the sidewalk and plaintiff's buggy for him to pass, but, as he was doing so, plaintiff jumped out and fell immediately in front of the machine and the body of the car passed over her. It was held that under either version of the affair the jury as authorized to find defendant negligent in failing to stop when he discovered, or should have discovered by ordinary care, the fright of plaintiff's horse.

CARELESS DRIVING

An operator of a motor car who saw, or by ordinary care could have seen, a horse and vehicle on a highway ahead of him, was required by the Kentucky statutes to give warning of his approach and to use every reasonable precaution to insure the safety of occupants of the vehicle; and evidence that he did not give any warning, that he drove the car at a high rate of speed, and that he did nothing toward respecting the safety of the persons in the vehicle, except to swerve the machine to the right to pass the vehicle, *prima facie* proved negligence, authorizing a recovery for injuries received by the persons in the vehicle in consequence thereof. This was decided in the last case of the National Casket Co. v. Powar, 125 S. W., Ky., 279, and since then has been a precedent in the state of Kentucky.

The Motor Maid

FROM the press of Doubleday, Page & Co. is "The Motor Maid," by C. N. and A. M. Williamson, a motor story dealing with the fortunes of a young society girl, who is half American and half French. To escape the attentions of a rich lover, she runs away from her relatives and serves as a lady's maid to a get-rich-quick English couple who are motoring from Cannes to Paris, not knowing what they want to see or ought to see, but simply touring as one of the means of displaying their wealth. The young woman who is intellectually and socially their superior, is overwhelmed with consternation on learning that she, as the maid, is compelled to sit on the outside seat of the car with the chauffeur and to occupy servants' quarters. But the courage born of the circumstance enables her to endure the ordeal and make the best of the situation. She is not long in discovering, how-

The Motorist's Bookman

ever, that the chauffeur is a well-bred, educated, and interesting young man, not at all averse to the labor of making her position quite tolerable. He is well versed in the lore and history of the country through which they are travelling and finds many an opportunity to instruct her in the same. She learns that he, too, is fleeing from an intolerable condition imposed upon him, which naturally excites her interest and sympathy. 'Tis the old, old story of love laughing at locksmiths and maiden aunts. While the book may be considered to be somewhat of a guide book, still it is primarily entertaining as a simple love story. Many historical sketches of places passed through contain interesting side lights.

Garages and How to Build Them

A valuable book for those contemplating building private or public garages is "Radford's Garages and How to Build Them," by William A. Radford. The book contains designs for fifty-five garages, each page showing a picture of a garage, diagrams of floor plans with sizes, etc. Following the illustrations of the different types is a chapter on garage construction, equipment, and accessories, and under this head is taken up construction of wood, masonry, concrete and other construction, with diagrams illustrating the schemes to be followed. Working diagrams are also given showing constructions for windows, doors, roofs, etc. Under the head of equipment the subject of turntables and oil and gasoline facilities is taken up. Working plans are given for building a repair bench, etc. This book should be interesting to those contemplating building garages.